

DTIC FILE COPY

2

# ECONOMIC ADJUSTMENT/CONVERSION

AD-A227 416

DTIC  
ELECTE  
OCT 05 1990  
S B D  
Co



July 1985

DISTRIBUTION STATEMENT A

Approved for public release;  
Distribution Unlimited

90 10 04 016



THE SECRETARY OF DEFENSE  
WASHINGTON, THE DISTRICT OF COLUMBIA

12 AUG 1985

Honorable Les Aspin  
Chairman  
Armed Services Committee  
House of Representatives  
Washington, D.C. 20515

Dear Mr. Chairman:

In keeping with the request in the House-Senate Conference Report on the 1985 Defense Authorization Act, enclosed is the Final Report on Economic Adjustment/Conversion, which analyzes the feasibility of establishing an office of economic conversion within the Department of Defense. A Preliminary Report of information available as of April 1985 was previously forwarded to your Committee in May.

The Report findings do not support the feasibility of the proposed office of conversion within the Department of Defense. The findings also show that there are existing adjustment mechanisms and resources that have responded effectively in the past to major community-worker dislocations in both civilian and Defense-related impact situations. Detailed research failed to identify any products in our current economy successfully developed through the conversion approach.

This Final Report on Economic Adjustment/Conversion was prepared under the guidance of an interagency task force of the President's Economic Adjustment Committee (EAC), which I chair. EAC is charged with providing coordinated assistance from 17 federal agencies to communities affected by major changes in Defense programs.

The member agencies of the President's Economic Adjustment Committee share a common goal of minimizing the dislocations that may be imposed on communities and workers by necessary major Defense program changes. Please be assured that the Economic Adjustment Committee is prepared to respond to such dislocations within the structure of our market economy.

Sincerely,

Enclosure

# **ECONOMIC ADJUSTMENT/CONVERSION**



**Report Prepared By:**  
**President's Economic Adjustment Committee**  
**and the**  
**Office of Economic Adjustment**  
**Office of the Assistant Secretary of Defense**  
**(Manpower, Installations and Logistics)**  
**The Pentagon, Washington, DC 20301-4000**

**July 1985**

# C O N T E N T S

| CHAPTER  | Page |
|--|------|
| SUMMARY.....   | i    |
| PART I: CONVERSION AND INDUSTRIAL IMPACTS  |      |
| 1. Introduction and Study Approach.....  | 1    |
| 2. Conversion Policy Issues.....   | 9    |
| 3. Workforce Associated with Select Weapons Systems.....   | 15   |
| PART II: PREVIOUS ADJUSTMENT/CONVERSION EXPERIENCE   |      |
| 4. Military Base Adjustment Experience - An Overview.....  | 19   |
| 5. Previous Community Economic Adjustment Experience.....  | 23   |
| 6. European Conversion Experience.....   | 31   |
| 7. Previous Industrial Conversion Experience.....  | 37   |
| PART III: CONVERSION TECHNOLOGIES AND MANPOWER SKILLS  |      |
| 8. Current Federal Acquisition Policies and Federal Efforts<br>in Technology Utilization.....    | 47   |
| 9. Feasibility of Prompt Implementation of New Technologies.....                                 | 51   |
| 10. Normal Industrial Development Process.....   | 55   |
| 11. State and Local Economic Development Process.....  | 61   |
| PART IV: ECONOMIC AND SOCIAL SERVICE ASSISTANCE TO PERSONS                                       |      |
| 12. Special Worker Assistance:.....  | 67   |
| 13. Defense Worker Placement.....  | 73   |
| PART V: ADJUSTMENT ASSISTANCE TO MINIMIZE DISLOCATION OF WORKERS,<br>COMMUNITIES, AND INDUSTRIES |      |
| 14. Feasibility of the Office of Conversion.....   | 79   |

|                      |                         |
|----------------------|-------------------------|
| By <i>per letter</i> |                         |
| Distribution/        |                         |
| Availability Codes   |                         |
| Dist                 | Avail and/or<br>Special |
| A-1                  |                         |

## APPENDICES

- A. House-Senate Conference Report on the 1985 Defense Authorization Act  
(Excerpt)
- B. Members - EAC Technical Task Force on Economic Adjustment/Conversion
- C. Federal Agency Comments on the Final Report
- D. Summary of Economic Adjustment/Conversion Bills
- E. Summary of Major Weapons Systems Programs
- F. Requests to Conversion Proponents on Products Developed  
Through "Conversion" and Responses
- G. Policy Context for Conversion
- H. Workforce Associated with Select Weapons Systems
- I. Distribution of Defense-Related Employment by Industry
- J. Military Base Economic Adjustment/Conversion Experience
- K. Previous Community Economic Adjustment Experience
- L. European Conversion Experience
- M. Previous Industrial Conversion Experience
- N. Feasibility of Prompt Implementation of New Technologies  
by Civilian Industries
- O. Normal Industrial Development Process
- P. State-Local Economic Development Process
- Q. Special Worker Assistance
- R. Defense Worker Placement

## GLOSSARY OF KEY TERMS

## BIBLIOGRAPHY

## SUMMARY

The House-Senate Conference Report on the 1985 Defense Authorization Bill requested the Secretary of Defense to study the feasibility of establishing an office of conversion in the Department of Defense and to submit the results of the study to the Armed Services Committees of Congress. The specific guidance from the conferees on the proposed office of conversion feasibility study stated:

"The conferees have in mind such readjustment assistance programs as would provide the means to promote orderly economic adjustment that would: (1) minimize the dislocation of workers, communities, and industries; (2) encourage conversion of technologies and managerial and worker skills developed in nuclear systems production to programs which serve the civilian sector; and (3) provide economic and social service assistance to persons affected by the readjustment."

The office of conversion feasibility study has been prepared by the Department of Defense with the advice and guidance of a Technical Task Force representing the seventeen federal agencies of the President's Economic Adjustment Committee. Many of the issues require an evaluation by impartial, independent experts in the field. The time involved to obtain this expertise through competitive contracts and to discuss the findings in an interagency forum required the submission of two reports to the Congress as follows:

- \* A Preliminary Report of the available information as of April 1985.
- \* This Final Report with the completed evaluations, findings and conclusions, as well as the comments of the member agencies of the President's Economic Adjustment Committee.

The House-Senate Conference Report requested that the study concentrate on community/worker adjustment problems. As a result, the study avoids the larger national macro-economic issues (i.e., the effects of large-scale reductions in the Defense share of GNP and the consequent offsetting monetary and fiscal policies involved).

## CONCLUSION

The member agencies of the Economic Adjustment Committee share a common goal of alleviating the impacts within our economy on communities and workers prompted by necessary major defense program changes. Several steps to strengthen existing Economic Adjustment Committee mechanisms are included in the Findings.

The research, analyses and findings in this report do not confirm the feasibility of the proposed office of economic conversion within the Department of Defense. There is little evidence to support a realistic expectation

that the proposed office of conversion would be capable of fulfilling the objectives for effective readjustment of communities, workers and industries as called for in the House-Senate Conference Report.

## FINDINGS

The findings in this report do not confirm that an office of conversion would be useful or beneficial in addressing major defense impact problems in our economy. The findings show that there are existing cost-effective adjustment mechanisms and resources which have successfully responded to major, community-worker dislocations, whether civilian or defense related. They indicate that an office of economic conversion is not needed to handle adjustments due to defense program changes.

This conclusion is reinforced by reflecting on the difference between "conversion" and existing "adjustment" mechanisms. The ending of production on a weapon system has effects on workers, communities, and firms. (This, of course, is true of civilian products as well.) "Adjustment" provides immediate targeted assistance to deal specifically with effects on workers and communities but usually not the firms in question. This adjustment assistance is used to design community-based programs that may include, for example, measures to attract new employment opportunities, improve the infrastructure of the community, resolve transportation problems and retrain or assist the displaced workers. The adjustment process uses the existing federal agency program structure in cooperation with state and local activities.

In contrast, "conversion" deals with the effects of contract termination through the firm by advanced planning and by substituting production of a new civilian product for the weapon system. Presumably, the same buildings and the same labor force--at about the same rates of pay--would be used; the only variable is the new product. Substantial continuing subsidies for individual firms and products would be needed to support "conversion"; moreover, conversion would involve a new federal office solely for defense impacts.

Following are the specific findings, grouped according to the structure of the conferees' request. The page numbers refer to the source of the finding in the full report.

### Minimize Community and Industry Dislocation

- \* While a part of defense production occurs in large single purpose facilities, much of the defense production activity associated with individual weapon systems takes place in industries making both defense and non-defense products. In the 92 industries most associated with shipments to the federal government, 85 percent of the workers were estimated to be associated with non-defense production (p. 17).
- \* The national employment associated with the strategic weapon systems identified in the House-Senate Conference Report is estimated to be about 380,000 jobs at the prime contractor,

subcontractor, and supplier levels. While there are isolated specific plant impacts on individual communities, the jobs are dispersed across the nation. Potential defense contractor employment cutbacks may be minor compared to other major plant closure impacts in recent years (pp. 15-17).

- \* Technical assistance (e.g., planning grants, base or plant reuse plans, industrial development guidance, and market surveys, etc.) by federal agencies and DoD, in cooperation with state and local governments, can help communities offset most major defense industrial cutbacks (pp. 29-30 & 65).
- \* There is an extensive record of successful adjustment in Defense-impacted communities. Civilian jobs at former military bases were replaced on a better than one-for-one basis (123,800 civilian jobs--largely private sector jobs--replaced 87,700 former DoD civilian jobs during the 1961-81 period). This actual civilian reuse experience, however, does not support the national advanced planning conversion approach (p. 19).
- \* Congress' study requirements for military base realignments (under 10 USC 2687) have tended to complicate community recovery efforts and should be revised (pp. 20-21). Improvements are being recommended by GSA to expedite the federal property disposal process (pp. 21-22).
- \* Three communities which underwent major defense-space industrial cutbacks during the early 1970s were examined in the study. Each community was successful in creating strong local economies with good future growth prospects. These prompt recovery examples resulted largely from local leadership and private sector investment. The community recovery efforts were also prompted by favorable national economic conditions and categorical federal programs (which are no longer readily available). However, stronger state economic development activities, during the past 10-15 years, have compensated, in part, for some of these federal program changes (pp. 29-30 & 65). Any federal economic adjustment or conversion program should operate in cooperation with and should reinforce state economic development activities (p. 65).
- \* Potentially impacted communities should be encouraged to initiate their adjustment planning efforts in advance of production line phasedowns or contract conclusions. To achieve this objective for the few cases involving major weapon system program completions, consideration can be given in preparing the 1986 Legislative Program to permitting DoD Community Planning Assistance under 10 USC 2391 for cases involving the conclusion of a major weapon system production program with 1,000 or more employees (pp. 30 & 83).



- \* In urging extensive national advanced planning, office of conversion advocates fail to appreciate the two key elements in successful local economic adjustment: (1) strengthening the competitive advantage of an affected community and (2) strengthening the programs and resources of state and local economic development agencies. Successful community economic adjustment usually occurs because of the community's commitment to its future. This local commitment--with federal resources used to supplement available state and local economic development resources--is as important as the plant and workforce capacities (pp. 13-14 & 64-65).
- \* During the past 25 years (1960-1985), the U.S. economy has produced over 41 million jobs and has largely absorbed the post-World War II baby-boom and a huge increase in the female workforce participation rate (p. 12).
- \* Implied in the office of conversion proposal is substantial intervention in the U.S. economy. Congress must determine to what extent it wishes the federal government to intervene throughout our market economy. An industrial conversion policy for defense-related industry cannot be separated easily from all other policies for civilian industry or from the general functioning of the economy (pp. 11-12).
- \* The most effective economic adjustment strategy that a community can have is a diversified economic base and an ongoing, economic development program--before a cutback or closing occurs (p. 64).

#### Encourage the Conversion of Technologies and Skills

- \* Conversion to most of its proponents involves advanced planning by alternative use committees at each plant or military base to develop new products or uses within a one-to-two year period prior to the defense cutback. A national conversion planning program would be expensive in relation to other existing federal and state economic development programs; its costs have been estimated by conversion proponents at "several hundred million dollars per year" (p. 9).
- \* Converting unique military products or specialized military industrial facilities to produce civilian products is often difficult. Detailed research has not identified even one successful product in our economy today which was developed through a military-to-civilian conversion approach. In fact, there are several market failures (pp. 6 & 37-45).
- \* Using the office of conversion advanced planning approach described above, the Battelle Memorial Institute found--based on its nationwide and European experience in industrial plant reuse--that the conversion concept would most likely result

in very limited success and would not be cost-effective. The complexities of the conversion problem and the dynamics of the marketplace simply do not readily lend themselves to this conversion planning concept and to a one-to-two year time-frame (pp. 6-7, 51 & 54).

- \* The Battelle experience in both the U.S. economy and in Europe reinforces the belief that government-directed conversion of industrial plants is a very complex process, fraught with many uncertainties and problems (p. 51).
- \* Among the eight industrial categories with the largest DoD purchases, only three industries contain near-term, feasible civilian commercial markets that offer potential to absorb additional market competition from former defense plant suppliers: radio and TV communications (SIC 365 and 366), electronic computing equipment (SIC 357), and electronic measuring instruments (SIC 382). Plants in other industries evaluated [shipbuilding and repair (SIC 3731), aircraft (SIC 3721), complete guided missiles (SIC 3761), aircraft engines and engine parts (SIC 372), and aircraft parts and equipment, not elsewhere classified (NEC) (SIC 3728)] will probably have to seek opportunities in areas unrelated to their present prime markets (p. 53).
- \* The reuse of industrial facilities is exceedingly complex and requires major professional input to both the marketing and engineering aspects of the redevelopment process. Based on its extensive plant redevelopment experience, the Pantus Company (Dun & Bradstreet) indicates that five years or longer may be typical from notification to start-up of the facility involving the redevelopment of a plant to produce and market a different product. The exact timeframe for any individual facility will depend upon the age and physical layout of the facility, the type of workforce skills, the location of the facility, and the incentives or price involved. The reuse process requires many years to implement, and success--even then--may never be assured or achieved (p. 59).
- \* New technologies available from the Federal laboratories, as an implied factor in the conversion approach, often require three to seven years for effective application and marketing. This source of new technology does not offer a timely offset for defense contractor cutbacks (p. 50).
- \* There are few relevant, successful conversion examples or mechanisms in the European experience which could be applied in our economy (pp. 5-6 & 36).
- \* Job generation in our economy appears to be occurring largely within small businesses and small enterprises. The advanced

planning approach, urged by conversion advocates, may well miss the sectors where job creation is actually occurring in our economy (p. 12).

- \* Diversification or adaptation of plants and firms to produce new products or old products in new ways occurs regularly in our economy (pp. 9 & 42).
- \* The Federal Acquisition Regulations already provide for reasonable pro-rata federal support for indirect expenses incurred for product diversification planning (pp. 47-48).
- \* New product development is not likely to be successful under the office of conversion approach without substantial government subsidies which can also be wasteful. Government assistance, in fact, can sometimes hamper adjustment efforts as was the case in the mass transit field in the 1970s (p. 44). Indeed, government imposition of a predetermined plan may retard the redeployment of capital and labor, or channel them into suboptimal uses (p. 10).
- \* Entering into civilian markets requires significant planning and leadtime sufficient to overcome the numerous hurdles. Without government support, the process may take from 5-10 years before generating a profit, if then. Yet, even with government assistance, the pre-notification clauses featured in the economic conversion bills, as currently written, are unlikely to provide sufficient lead-time to prevent employment fluctuations (p. 44).

#### Provide Assistance to People Affected by Adjustment

- \* Existing community-based programs, funded through Title III of the Job Training Partnership Act (JTPA), already provide substantial assistance to workers affected by plant closings or massive layoffs. Delivery of assistance is at the local area level, with overall supervision of the programs carried out by state agencies. Such programs would be available to support any significant defense spending changes that actually affect individual defense plants and communities (pp. 70-71 & 76-77).
- \* While there is no need for new funding or new agencies to address the potential problems of defense-worker dislocation (given the Title III JTPA structure), it is important in the event of an actual dislocation that program delivery resources be quickly mobilized to assist defense workers in advance of an actual layoff (pp. 71 & 76-77).
- \* Previous and current assistance programs provide valuable information on what the cost-effective programs are for assisting workers displaced by plant closings or massive layoffs.

ams providing only income support to affected workers (Basic Unemployment Insurance) have a worker-disincentive effect and are not cost-effective in relation to positive adjustment programs like job-search instruction and worker retraining and/or relocation expenditures. Income support programs have been criticized for their disincentive effect on recipients to return to work. The cost-effectiveness of positive adjustment programs is enhanced by assembling the full complement of program services (including community-wide support) before layoffs actually occur (pp. 70-71).

- \* Individual firms frequently choose to assist displaced workers as part of their labor relations policies, often but not always, as required by a collective bargaining agreement. A sense of corporate responsibility is a major reason, but firms also recognize that an impending shutdown or massive layoff may induce premature vacancies among key workers and other related costs. Firms can set up occupational and personal counseling, job banks and training, and pay for intra-company transfers and severance. These activities generate high placement ratios because of timely intervention and optimal program design, based on local and industry realities. Expenses associated with these activities are allowable under current federal acquisition regulations (pp. 75-76).
- \* The leadtime needed to initiate worker placement programs and to organize the community adjustment program can be accommodated within the DoD budget process. Based on the annual report on "Program Acquisition Costs by Weapon System", submitted with the annual DoD Budget, OEA can investigate the likely community-worker impacts from the proposed completions of major weapon system production programs as a normal step in informing the EAC agencies of future potential impacts. This case-by-case impact analysis approach would identify the few likely community-worker impact problems by May of each year in behalf of EAC, the local community, and the affected Private Industry Council (pp. 77 & 82-83).
- \* With the exception of a few large defense facilities, it is difficult to distinguish defense from non-defense production. Defense-related output of many defense contractor plants is not a large percentage of total plant demand. "Defense-related" workers often cannot be distinguished from those working on shipments to civilian sectors. This fact would make a program of separate worker benefits extraordinarily difficult to manage. It would also be difficult to justify preferential treatment to defense contractor employees, particularly when they comprise a very small percentage of the national labor force (p. 17).

PART I

CONVERSION AND INDUSTRIAL IMPACTS

## Chapter 1

### INTRODUCTION AND STUDY APPROACH

The House-Senate Conference Report on the 1985 Defense Authorization Bill requested the Secretary of Defense to study the feasibility of establishing an office of conversion in the Department of Defense and to submit the results of the study to the Armed Services Committees of Congress by April 30, 1985.

A companion feasibility study on an annual reporting requirement for the employment impact of eight specific tactical and strategic nuclear delivery systems was also called for in the House-Senate Conference Report.

The request in the Conference Report for both feasibility studies is included at Appendix A. The specific guidance from the conferees on the proposed "office of conversion" feasibility study stated:

"The conferees have in mind such readjustment assistance programs as would provide the means to promote orderly economic adjustment that would: (1) minimize the dislocation of workers, communities, and industries; (2) encourage conversion of technologies and managerial and worker skills developed in nuclear systems production to programs which serve the civilian sector; and (3) provide economic and social service assistance to persons affected by the readjustment."

#### Interagency Approach to the Conversion Study

The office of conversion feasibility study has been prepared by the Department of Defense with the advice and guidance of a Technical Task Force composed largely of the member agencies of the President's Economic Adjustment Committee. The Task Force members and their agencies are identified at Appendix B.

This interagency approach is appropriate, since many of the federal agency programs address economic and employment dislocations from both civilian industrial cutbacks and the related job losses at plants producing defense equipment. The final report to Congress has also been coordinated with our colleague agencies and their comments are included at Appendix C.

Many of the issues raised in the office of conversion feasibility study require an evaluation by impartial, independent experts in the field. The time element to retain this expertise on competitive contracts and to discuss the findings in an interagency forum requires the submission of two reports to the Congress as follows:

- \* A Preliminary Report of the available information as of April 30, 1985.

- \* This Final Report with the completed evaluations, findings and conclusions, and interagency comments.

#### Background Legislative History for the Feasibility Study

During the 1960s and 1970s, economic conversion bills were proposed by Senator George McGovern and others. In recent years, this general economic conversion legislation has been introduced by Congressman Ted Weiss and others as H.R. 425 in the 98th Congress and H.R. 229 in the 99th Congress. Alternative but similar language was also introduced by Congressman Nick Mavroules as H.R. 4805 in the 98th Congress and as H.R. 1066 in the 99th Congress. These two bills are described in greater detail at Appendix D.

The Department of Defense and many of the other federal agencies have opposed their enactment. DoD has been especially concerned with a costly planning structure, the mandatory pre-termination notice requirements in DoD contracts, the separate defense worker benefit programs, and a surcharge financing mechanism on defense contracts which appear in one or both of the bills. The Department believes these additional costs and contract termination requirements will not contribute in any way to our national security needs.

The House Armed Services Committee conducted hearings on the two bills on August 1, 1984. In addition, the House of Representatives' version of the 1985 Defense Authorization Bill included a provision--offered by Congressman Ronald Dellums--which requested the President to submit an office of conversion feasibility study to the Congress along with a companion annual employment impact feasibility study for eight specific tactical and strategic nuclear delivery systems.

During the House-Senate Conference Committee deliberations, these two feasibility studies were requested of the Secretary of Defense.

#### Related Report on Contractor Employment

As a companion to the office of conversion study, the Conference Report requested the Secretary of Defense to submit a study analyzing "the feasibility of an annual reporting requirement on the employment impact and its distribution by congressional districts of the tactical and strategic nuclear programs. The report should include the name and location, disaggregated to the congressional district level, of all contracts in excess of \$5,000,000 and the type and number of jobs created from the following programs: (1) the M-X missile program; (2) the B-1 bomber program; (3) the Pershing II missile program; (4) the ground-launched, sea-launched, and air-launched cruise missile programs; (5) the Trident I missile program; (6) the Trident II missile program; (7) the Trident submarine program; and (8) the Strategic Defense Initiative and other strategic missile programs."

After careful study, the Department concluded that the contemplated annual reporting requirement is not feasible.<sup>1</sup> DoD does not currently collect the required data from its contractors. Consequently, an annual report would necessitate the development of a new, and very expensive, collection system. The infeasibility of the proposed annual report is reinforced by the considerable pertinent data that are already available to serve as the basis for special studies in the event of scheduled individual weapons systems cutbacks. Any such special case-by-case study on specific weapon systems could determine the number and location of individuals who might be affected if any specific program were cancelled. The special analysis could also provide an indication of the appropriate assistance needed to address the expected dislocation.

It is important to note that there are not imminent employment impacts anticipated in the budget for these eight weapon systems programs, subject obviously to Congressional action on the President's budget. Also, these eight systems are in varying stages of implementation. One of the systems, the Trident I missile, is largely completed and the production line is being phased-out (following the FY1984 program) in favor of the Trident II missile production program. Most of the weapon systems currently have long-term production programs. Finally, the Strategic Defense Initiative is in the preliminary research and definitional phase with little current production employment. A summary of these eight major programs since 1981, showing their largest contractors and major production locations, is included at Appendix E.

#### Analyzing "Conversion" Does Not Imply DoD Support of Conversion

In demonstrating its willingness to conduct the office of conversion feasibility study, the Department of Defense must emphasize that both the Administration and the Department are opposed to any reductions in the weapons systems programs which were identified in the House-Senate Conference Report.

This feasibility study has investigated the means for minimizing the dislocation of workers, communities and industries from any hypothetical, abrupt future weapon system reductions made independently of Department of Defense and Administration recommendations and apart from normal contract/production line terminations at the conclusion of the weapon systems procurement process.

#### Office of Conversion Feasibility Study Focus

In the original House Authorization Bill, it was clear that the "economic readjustment assistance to communities and workers affected by the subsequent elimination of strategic and tactical systems provided for under this Act" referred to the eight weapons delivery systems for the companion employment impact study.

---

<sup>1</sup>Office of the Secretary of Defense, "Feasibility of An Annual Report on Defense Employment by Congressional District for Selected Weapons Systems" (Washington: April 1985)



The specific language in the House-Senate Conference Report dictates that this office of conversion feasibility study concentrate on the community/worker adjustment problem and, as a result, the study has avoided the national macro-economic conversion issue (i.e., the effects of large-scale reductions in the defense share of the Gross National Product).

National economic conversion involves an entirely different set of tools--fiscal and monetary policies--that are beyond the scope of assisting local communities and workers. Moreover, macro-economic conversion problems may be minor on a national scale, while specific economic and social impacts on individual communities and workers from selective defense cutbacks may be significant.

While the study may result in information and analyses useful to the macro-economic conversion issue, this proposed office of conversion feasibility study focuses on the problems likely to be encountered by workers and individual communities in the event of the selective elimination or termination of a specific strategic or tactical weapon delivery system, like one of the eight systems described in the related employment impact reporting requirement.

In light of the second and third objectives for the office of conversion (i.e., conversion of technologies and skills to serve the civilian sector and to provide economic and social service assistance), a clear distinction is made early in the study between the proposed office of conversion and the existing interagency Economic Adjustment Program. The Economic Adjustment Program provides coordinated assistance by seventeen federal agencies to communities affected by major defense impacts.

The focus of the study is to identify specific and practical economic adjustment and worker placement assistance policies which actually work (and are cost-effective) in our market economy by securing new jobs for the affected communities, early job opportunities for displaced workers, and effective reuse of industrial facilities. Based on the extensive past experience with federal assistance programs, this study simply asks "what cost-effective policies and economic adjustment tools actually work in our economy?" The study also identifies further improvements needed to assist workers and communities in adjusting to major cutbacks in defense programs.

### Structure of the Report

This study has been prepared as an overview of the economic adjustment/conversion subject. Each of the major chapters in the study is supported by a more detailed discussion and analysis in a separate appendix. As a result, there are a minimum of footnotes and references in the study itself and the reader is encouraged to turn to the appropriate appendix for a further in-depth discussion on the specific topic of interest.

### Part I: Conversion & Industrial Impacts

Part I of the study discusses the general issues of conversion and industrial impacts. The policy issues related to the creation of the proposed office of conversion are summarized in Chapter 2.

The size and nature of community defense conversion/adjustment problems can have an important bearing on the type of adjustment mechanisms needed to address the impact. The scope of hypothetical selective defense industrial impacts for several weapon delivery systems is discussed in Chapter 3.

The scope of nation-wide job displacement during the 1979-84 period provides a context in which to judge the need for a separate adjustment/conversion process for defense impacts. The basic presumption by conversion advocates that "defense-related workers" can be distinguished clearly from other workers in the economy is addressed in Chapter 3.

## Part II: Previous Adjustment/Conversion Experience

The general background on economic adjustment and conversion is presented in Part II. In addition, a glossary of terms and a bibliography on the major publications on economic adjustment and conversion since 1960 follow the Appendices.

The experience by the Office of Economic Adjustment (OEA) and the President's Economic Adjustment Committee (EAC) in assisting communities impacted by previous military base closures is summarized in Chapter 4. In fact, the civilian reuse of approximately 100 former military facilities represents the most comprehensive body of experience in defense conversion but from a different perspective than that advocated by the conversion proponents.

The economic adjustment experience has involved a facility-by-facility reuse by specific expanding firms or public activities based on a strong industrial development marketing effort by the individual communities. There were few immediate plant reuse solutions accomplished through an "advanced planning" approach or through the creation of a new product or industry for production at the former bases. The Economic Adjustment process is a community-based approach. EAC/OEA serves as a facilitator on behalf of the community, rather than the primary actor in securing civilian reuse of former DoD facilities.

The economic adjustment experience in assisting communities affected by major defense and space industrial cutbacks during the 1970s at Wichita, Kansas; Taunton, Massachusetts; and Huntsville, Alabama has been analyzed by the National Council for Urban Economic Development (CUED) in Chapter 5. In view of the changing structure and level of federal grant assistance and the emerging dominant role of state economic development activities, the recent experience in Hagerstown, Maryland, in dealing with a large aircraft plant closure involving both civilian and military work, has also been analyzed by CUED.

The experience of the European nations and European firms is often cited to support new conversion initiatives within our economy. While recognizing that many of the European nations have more centrally structured economies than the United States, the conversion approach has not been successfully used in Europe to transition military production to produce civilian goods. In Chapter 6, Professor Bernard Udis of the University of Colorado at Boulder has

updated his previous research on European conversion approaches<sup>2</sup> in order to confirm that the European approaches do not offer any promise for successful conversion in the U.S. economy.

Previous authors in the economic conversion field have commented that there are "very few success stories in adjustment to weapon system cut-backs."<sup>3</sup> Nevertheless, the previous unsuccessful conversion effort by Boeing-Vertol, as well as the previous diversification initiatives by Kaman Aircraft, Raytheon, and Acurex, is discussed in terms of the "lessons learned" in Chapter 7, as prepared by Robert DeGrasse of the Orkand Corporation. The bibliographic research also indicated very few successful conversion examples for defense industrial facilities. Therefore, a separate request (see Appendix F) was made to twelve active conversion proponents to identify other products currently on the market which were successfully developed through the "conversion" approach. One acknowledgement and three responses have been received to date from the conversion proponents and these responses are also included at Appendix F. The responses confirm the lack of any successful economic conversion projects but attribute this to disinterest by defense contractors and the Executive Branch.

### Part III: Conversion Technologies and Manpower Skills

In Part III, the report investigates the alternative approaches to "encourage conversion of technologies and managerial and worker skills developed in nuclear systems production to programs that serve the civilian sector," as requested in the House-Senate Conference Report.

The current provision in the Federal Acquisition Regulations (FAR) for allowable corporate diversification planning costs is discussed in Chapter 8--together with allowable costs under the FAR for severance pay and other benefits for displaced workers. The efforts of the federal government to anticipate and prompt changes in the utilization of technologies are also discussed in Chapter 8.

A critical assumption underlying both the conversion approach and the House-Senate Conference request is that new, appropriate technologies are available and can be implemented readily by defense prime contractor plants to produce new civilian products. It is presumed that new "second stage" or alternative technologies can be readily identified for new civilian products once a specific weapon system contract termination decision is made. This assumption is analyzed in Chapter 9 by the Battelle Memorial Institute, a

---

<sup>2</sup>Bernard Udis, From Guns to Butter: Technology, Organization and Reduced Military Spending in Western Europe (Cambridge, MA: Ballinger Publishing Company, 1978).

<sup>3</sup>William D. Hartung, The Economic Consequences of a Nuclear Freeze (New York, NY: Council on Economic Priorities, 1984), pp. 91-92.

recognized industrial development-location consultant familiar with new technological advances. Battelle concludes that the conversion approach to applying new technologies will result in very limited success and will not be cost-effective.

The Chapter 9 discussion on new technologies also covers the plant reuse process in civilian industry and the extent to which private firms identify new civilian products. As an example of anticipating new technologies, the Battelle Memorial Institute has identified the potential new civilian technologies which could be competitively produced and marketed without government subsidy during the 1985-86 period for eight major defense industries.

A case example of the normal industrial plant reuse process is presented in Chapter 10, as prepared by the Fantus Company, the industrial location subsidiary of Dun & Bradstreet. This example assesses the plant and workforce capacities for an older, typical defense heavy equipment manufacturing facility--the Blaw-Knox Corporation castings plant in East Chicago, Indiana. Chapter 10 also describes the normal complex plant reuse process and concludes that a minimum of five years is typically needed to redevelop an industrial facility for new production in a new product line.

The proposed office of conversion should be evaluated within the current structure of federal, state and local relations on economic development. Therefore, the activities of the 51 state economic development agencies and approximately 7,500 local economic development organizations are described in Chapter 11. This chapter was prepared by the National Association of State Development Agencies (NASDA) with the support of the National Council for Urban Economic Development.

#### Part IV: Provide Economic and Social Service Assistance to Persons

In Part IV, the report analyzes the effectiveness of previous special federal assistance programs to "provide economic and social service assistance to persons affected by the (defense industrial) realignments," as requested in the House-Senate Conference Report.

The effectiveness of previous special worker economic and social service assistance programs is discussed in Chapter 12, both in terms of the early placement of the affected workers and in terms of promoting long-term local economic development. Chapter 12 was prepared by the Abt Corporation.

Chapter 13 discusses existing federal and state as well as private sector benefit programs. Worker placement experience for several public and corporate placement programs is also summarized--together with an analysis of other cost-effective options for the prompt identification, retraining, and placement of the affected industrial workers. Finally, Chapter 13, also prepared by the Abt Corporation, discusses how assistance to displaced defense contractor workers can be expedited within the current Joint Training Partnership Act program.

Part V: The Structure of Adjustment Assistance to Minimize Dislocation of Workers, Communities and Industries

Part V of the final report identifies alternative approaches for providing adjustment assistance to workers, communities and industries--based on the previous research and analysis in the preceeding chapters. The advice and guidance of the Economic Adjustment Committee Technical Task Force were particularly important in the preparation of this part for the Final Report.

Chapter 14 analyzes the feasibility of the proposed office of conversion based on the evidence and findings in the previous chapters. This chapter discusses whether the proposed office of conversion could be expected realistically to accomplish or achieve the House-Senate Conversion Report objectives (i.e., to what extent are the Conference Report objectives "capable of being dealt with successfully" or "capable of being done or carried out" by the proposed office in addressing major defense impacts within our market economy).

## CHAPTER 2

### CONVERSION POLICY ISSUES

The requested study in the House-Senate Conference Report on the feasibility of an "office of conversion" should be discussed within its economic policy context. This chapter summarizes the key policy issues related to the feasibility study.

#### Definition

"Conversion" has been defined as a planning process for developing alternative uses for defense facilities and workers engaged in defense production in advance of changes in policy or budget reductions that may curtail work at the facilities. To its proponents, conversion means one-to-two years' lead-time for planning of new products by alternative use committees and for retraining of the affected workforce. The guidance in the House-Senate Conference Committee Report followed this general definition.

The emphasis on a national advanced planning program is crucial to the conversion concept. For instance, the advanced planning process in the Weiss Bill (H.R. 229, as described at Appendix D) envisions the creation of an overall national conversion planning office and alternative use committees for each military facility and industrial activity employing 100 or more persons. This national conversion planning program would be expensive in relation to existing federal and state economic development programs; its costs have been estimated by conversion proponents at "several hundred million dollars per year." Conversion would involve government intrusion into the plant and product planning responsibility which has traditionally been a private sector responsibility in our economy.

Conversion can be distinguished from "diversification," a related strategy for a company entering new markets either by purchasing another firm in the desired field, or by applying the company's existing technology and market expertise over a long-term period to develop new products. Corporate diversifications usually involve the transition from one civilian market to another, as well as from a military sector to a new civilian market. Diversification occurs regularly in our economy.

Conversion advocates in Sweden recognize that a change from military to civilian products usually takes 8 to 10 years and requires direct government planning assistance and subsidies in order for a high technology product to become profitable.

#### Conversion Implies Separate Defense Plants

The definition of conversion offered by the conversion proponents rests on a perception of the defense production which occurs in plants essentially dedicated to that purpose. Although a major weapon system is usually budgeted as a single entity, it is rarely built by a single firm. Typically, the government enters into contracts with different firms for various parts of the

complete system. These subassemblies are then transferred as government furnished equipment to the firm or firms charged with final assembly of the system. In the case of a missile, the engines, guidance system, radar, and controls may each be built by a different firm and in a different location. Construction and support activities needed to deploy the system involve yet other firms. All of these firms are prime contractors.

Moreover, a large part of defense production, even on systems which may be assembled in a single purpose facility, takes place in plants that produce a wide variety of goods for both the civilian and military markets. This is particularly likely to be the case for castings, electronic systems and other materials which become part of a finished military product. As a general rule of thumb, each dollar awarded to a prime contractor begets an additional dollar of purchases from lower tier defense producers, subcontractors and other suppliers. Production at these levels is even less likely to occur in easily identifiable defense facilities.

Redeployment of capital and labor, previously used to build the weapon system, will occur if a program is terminated. How rapidly this will happen depends on a large number of things--product opportunities, the nature of the facilities and labor force, locational attractiveness, the general state of the economy, etc.

The conversion approach implies that government intervention in advance will cause this process to occur more smoothly or produce better results than would occur under current market arrangements.

It is far from clear that this is the case. Indeed, government imposition of a predetermined plan may retard the redeployment of capital and labor, or channel them into suboptimal uses. As indicated in Chapter 7, extensive federal subsidies may be needed for conversion of single-purpose defense plants to be successful. Redeployment depends critically upon information--about product opportunities, product markets, and financial markets. For the conversion approach to even have a chance to work, the market and financial information available to the government would have to be better, in some fashion, than the information available to the firm owning the plant. This is highly doubtful.

#### Differences Between Conversion & Economic Adjustment

Conversion proponents focus on conversion as a means of reducing the overall Defense budget or offsetting specific weapons systems cutbacks. Conversely, the interagency Defense Economic Adjustment Program recognizes that specific community and worker impacts may occur even within a stable or growing Defense budget. These specific community impacts result from: (1) normal large weapons systems contract completions at the end of a system production program, (2) base realignments for economies in the DoD budget, and (3) new community growth impact situations. The Economic Adjustment Program addresses community impacts on a case-by-case basis--generally by formulating a recovery program with the affected community to address the specific impact.

Conversion also involves a special program to assist defense workers and reuse defense industrial or base facilities--apart from existing federal domestic assistance programs. The Defense Economic Adjustment Program relies on existing domestic assistance programs--without creating a new governmental structure. The Program regards defense impacts as not inherently different from (or more serious than) other major dislocations in our economy. The conversion approach suggests that potential defense production cutbacks could be so significant or specialized that extraordinary treatment, apart from the existing federal and state assistance programs, is warranted.

#### Strong National Economy Fosters Adjustment/Conversion

Local economic adjustment and conversion occur most effectively during a period of aggregate growth in the national economy. The evidence from all the adjustment case examples in this report indicates that firms seeking new plant locations, to meet rising national demand, will locate to areas with an available, skilled labor force. Worker placements are more effective and permanent in an expanding economy.

#### Conversion & National Industrial Policy

The proposed office of conversion, as described in the House-Senate Conference Report, and the two conversion bills before the Congress, involves a larger issue of whether there should be a national industrial policy for defense activities. An industrial policy has been described by the Congressional Budget Office "not so much as a policy debate over the best way to address America's long-term industrial problem," but rather as a debate focusing, in large part, on how America should react to the threat of change in our economy and society.

The public literature on the industrial policy debate is extensive. The definitions of industrial policy are vague and range from:

- \* encouraging an explicit statement of all the various tax code and subsidy inducements within our economy in a coherent structure, to
- \* the government becoming an active interventionist in the economy.

The proposed office of conversion would be on the active interventionist end of the industrial policy spectrum by "encouraging conversion of technologies . . . developed in nuclear systems production to programs that serve the civilian sector."

As will be indicated in Chapter 3, with the exception of about 100 major contractor plants, defense workers cannot realistically be distinguished from other workers throughout the economy. In weighing the feasibility of a proposed office of conversion, therefore, Congress should determine to what extent it wishes the federal government to intervene throughout our market economy. In summary, it would be difficult, if not impossible, to have an



industrial policy for defense-related industry, as though such a policy could be separated from all other policies for civilian industry or from the general functioning of the economy.

### Job Generation in Our Economy

One of the major concerns of the industrial policy debate is the performance of the economy in generating jobs. During the past 25 years, the economy has produced over 41 million jobs and has largely absorbed the post-World War II baby-boom and a huge increase in the female workforce participation rate.

Real wage rates declined following the oil price increases of 1973 and 1978-79 to a level about equal to 1962 levels. Manufacturing jobs have declined as a percentage of total employment, but not in absolute numbers. As a result of the dynamics in our market economy, the U.S. economy has been a remarkable job-creating machine.

Over 80 percent of the new jobs in our economy are being generated by small firms and small enterprises employing fewer than 100 persons. Conversely, during the past 15-20 years, employment in the Fortune 1000 firms and the federal government has actually declined by nearly six million jobs. The U.S. job generation is being fueled by the creation of over 600,000 new businesses each year--or more than three times the 1961 level.

The difficult conversion question is how can an advanced planning process by alternative use committees in the larger defense activities, financed by grants from Washington, begin to take into account the decentralized job generation and new business formation phenomena which are actually spurring our economy? The conversion proponents recognize the importance of a decentralized conversion process, but the advanced planning process focuses on existing major plants, where there has been an overall declining employment picture.

The actual small business/small enterprise job generation experience does not suggest that the office of conversion advanced planning approach would be inappropriate. However, the office's objectives may be extraordinarily difficult to achieve in relation to where job creation is actually occurring in our economy. An advanced planning process may simply be better suited to the large Fortune 1000 firms, which unfortunately are experiencing overall declining employment levels. Yet, the economic adjustment or conversion dilemma is that these are the firms which experience specific cutbacks when individual weapon systems are concluded or terminated.

The small business/small enterprise experience also suggests that communities or regions should be stimulating new, local, business formation and expansion as a principal, long-term, economic development objective. Finally, the small business job generation experience suggests the importance of two factors: (1) advanced diversification planning at the community level; and (2) the federal agencies and states serving in a facilitator or support role to aid in community diversification efforts.

High technology employment is the current rage of the economic development profession. The evidence indicates that the several high technology sectors will grow from three percent of the U.S. employment base to about four percent by 1993. High technology jobs, therefore, are not a solution by themselves to defense industrial cutbacks. The U.S. economy has been successful because it has created unglamorous but challenging "low-tech" and "middle-tech" jobs in addition to glamorous high technology opportunities.

#### U.S. Investment and Productivity

The U.S. economy is not lagging in plant and equipment investment. Investment in all industries for 1984 amounted to about \$333.4 billion in relation to about \$294.8 billion for 1980, measured in 1984 dollars. Productivity in the U.S. economy has shown growth during the past two years, after remaining largely stable since 1977. However, the U.S. faces serious competitive challenges. To address these challenges, the President's Commission on Industrial Competitiveness has proposed a series of programs and actions which do not include any initiative to move toward a national industrial policy.<sup>1</sup>

#### Community Competitive Advantage

In planning the reuse of any industrial plant or former military base, it is important to remember that there are over 7,500 local economic development organizations and 51 state economic development activities competing for new employment opportunities in a highly competitive environment. The economic development role of state and local governments is discussed further in Chapter 11 and at Appendix P.

Many communities recognize that their local business climate and quality of life are essential to attracting new firms and especially important to retaining existing businesses. Research indicates that approximately 90 percent of all new jobs in a community are created by existing companies and new company start-ups. An effective community economic adjustment strategy should begin, therefore, with upgrading the community's capacity to retain and attract business investment.

By focusing on advanced planning through alternative use committees, the conversion approach gives little attention to a key element in local economic development: strengthening the competitive advantage of the affected community. Community economic adjustment really takes place within an environment where the community's progress in addressing its future is every bit as important as the plant or workforce capacities. It is critically important to remember that conversion and economic adjustment are not abstract terms; economic adjustment and conversion must take place in specific communities and help individual workers.

---

<sup>1</sup>President's Commission on Industrial Competitiveness, Global Competition: The New Reality (Washington, DC: 1985).

## Federal Government Role in Community Dislocation Problems

The Economic Adjustment Committee has previously approached the community worker dislocation problem from the perspective of a facilitator for local and state action. Recognizing that potential defense impacts are only a part of a larger class of plant closures and dislocations in our economy, it is valuable to weigh the recent comments of the Northeast-Midwest Institute on the proper role of the federal government in addressing dislocation problems:

"The effects of the new American unemployment will not yield to quick solutions, nor will they be addressed through any single new initiative. . . . This approach rests on the conviction that the federal government's macro-economic responsibilities should be reaffirmed and its role in addressing the problems of dislocated workers should be redefined to that of enabler of community-formulated solutions."<sup>2</sup>

\* \* \* \* \*

A more extensive discussion of the policy context for conversion is reflected at Appendix G.

---

<sup>2</sup>Paula Duggan & Virginia Mayer, The New American Unemployment: Appropriate Government Responses to Structural Dislocation (Washington, DC: Northeast-Midwest Institute, 1985), p. v & 49.

## Chapter 3

### WORKFORCE ASSOCIATED WITH SELECT WEAPONS SYSTEMS

The feasibility of establishing an office of conversion, in part, depends on the size of the workforce that would be converted from producing weapons systems to producing non-defense goods. For the weapons systems used as a reference point throughout this report, an estimated 380,000 worker-years are associated with \$16.5 billion in FY1985 acquisition costs. The estimate includes prime and subcontractor employment, as well as the employment associated with their suppliers. As a point of comparison, national employment is about 106,000,000 civilian jobs.

In addition, the feasibility of establishing an office of conversion depends on the geographic dispersion and industrial distribution of the workforce that would be converted. While precise geographic location of the jobs associated with a particular system is infeasible without excessively costly surveys of contractors,<sup>1</sup> the prime-contractor jobs appear to be dispersed widely across the nation. With the exception of major defense contractors, it may be difficult to distinguish defense from non-defense production. Many defense-related manufacturing industries are producing output for which defense demand is not a large percentage of total plant demand.

#### Acquisition Costs and the Associated Workforce

For the weapons systems used as a reference point throughout this report, acquisition costs have grown from \$5.2 billion in FY1981 to \$18.0 billion in FY1985 (see Appendix E). For FY1985 acquisition costs, the Bureau of Economic Analysis' RIMS II model was used to estimate worker-years of employment associated with all but one of the weapons systems--the Strategic Defense Initiative (SDI). The SDI program was not included because the industrial patterns of the expenditures for this new system have not been established yet. The analysis indicated that, at the national level, about 380,000 worker-years of employment would be associated with \$16.5 billion in acquisition costs.<sup>2</sup>

This estimate includes all prime contractor and subcontractor employment, as well as the employment of their suppliers. Not all of the estimated worker

---

<sup>1</sup>For additional information on available contract data, see the related report to Congress on the feasibility of an annual DoD contractor employment reporting system at Appendix H in this report.

<sup>2</sup>RIMS II is an input-output model developed by the Regional Economic Analysis Division of BEA, U.S. Department of Commerce. The model was run to exclude any employment impacts due to the personal consumption expenditures of employees in order to provide an estimate only of employment associated with prime-contractor, subcontractors, and their suppliers, as described further at Appendix H.

years refer to jobs in FY1985, since FY1985 acquisition costs can generate contractor expenditures and employment after FY1985.

Approximately 80 percent of the estimated 380,000 worker-years of employment were classified in durables manufacturing; however, 70,000 to 80,000 were classified in other industries--primarily transportation, utilities, trade, and business services. It is important to remember that even in the unlikely and purely hypothetical case that all contracting associated with the major weapon systems (\$16.5 billion) terminated, national unemployment would not go up by 380,000 workers. From a national point of view the \$16.5 billion could be spent otherwise, and employment would be generated elsewhere in the economy.

Several indications of the relative significance of the employment associated with the FY1985 acquisition costs for the weapons systems can be made:

- \* National employment is about 106,000,000 civilian jobs. More than 10,000,000 people are engaged in durables manufacturing production. At an outside maximum, the eight systems only account for less than four-tenths of one percent of our national employment base.
- \* The Bureau of Labor Statistics estimates that between 1979 and 1984, approximately 5,100,000 workers, who were at their jobs for more than three years, were displaced by a plant or company close-down or relocation. The majority of workers were employed in durables manufacturing. The bulk of the plant closures occurred during the 1981-82 recession. About 40 percent (2,000,000 people) when surveyed in January 1984 had left the labor force or were still looking for work. In comparison, potential defense cutbacks may be minor. There is an important policy issue of whether defense-related workers should receive preferential treatment in relation to other displaced workers in our economy.
- \* As an additional comparison, Rice University estimated that the Houston, Texas area lost 60,000 jobs in durables manufacturing from 1981 to 1983--35 percent of the 1981 level. Thus, potential defense weapons systems reductions may be minor in relation to other major adjustments in the civilian economy.

#### Geographic Dispersion and Industrial Distribution of Defense Employment

For three weapons systems (the Pershing II, the Trident I & II, and the Cruise missiles), BEA matched information on prime contract awards (from the Defense Department's DD350 form) with BEA national and regional employment estimates. The three systems were chosen because they were in "steady-state" production, and, therefore, a particular year's prime contract awards could be used as a reasonable proxy for annual prime-contractor expenditures and jobs. Their analysis was based on thousands of DD350 records comprising almost all prime contract awards for the three systems.

As shown at Appendix H, an estimated 70,000 jobs nationwide were associated with \$3.25 billion in prime contract awards for the three systems in FY1983. Most of the jobs were classified in durable manufacturing industries; however, approximately 15,000 jobs were classified in other industries.

Contractors in 50 counties and 20 states were awarded prime contracts for these three systems; 37,000 jobs were estimated to have been generated by prime-contractor awards. While it is important to remember that precise geographic location of jobs (even prime-contractor jobs) is infeasible without costly surveys of contractors, the BEA analysis can be used as a reasonable indication of the general pattern of the geographic dispersion and the relative regional size of prime-contractor employment. In seven instances (totaling 30,000 of the 37,000 estimated prime-contractor jobs) 1,000 or more jobs were identified in one county. However, in only five instances did the estimated prime-contractor jobs represent more than one percent of county total employment; the highest percentage was 2.5 percent in Orange County, Florida. Thus, while nearly 50 percent of the total employment (30,000 of the 70,000 jobs) appear to be geographically concentrated (although still dispersed among seven counties nationwide), the estimated employment is not a large percentage of any particular county's total employment. Significant impacts could occur, however, at the community level in a few instances.

Two general characteristics of the industrial distribution of the defense-related workforce are important to remember:

- \* With the exception of a few predominately defense-related manufacturing industries (for example, tank and missile manufacturing), defense production occurs in industries making defense and non-defense products. While the overall portion of defense work can be analyzed through national and regional input-output tables, it is difficult to distinguish individual defense and non-defense workers. As tabulated at Appendix I, the Bureau of the Census in 1982 identified 855,000 defense-related employees in a sample of 6,500 plants, classified in the 92 manufacturing industries that made the largest total value of shipments to the federal government--80 percent of which were to the Department of Defense. Total employment in the sampled plants was 5,445,100; therefore, 85 percent of the employees in the sampled "government-related" industries were estimated to be associated with non-defense production.
- \* Defense-related production does not take place exclusively in large plants. Therefore, concentrating any adjustment or conversion activities on major defense contractors may only address part of the defense-related workforce. The Department of Defense's Office of Small and Disadvantaged Business Utilization estimates that almost 35 percent of DoD's procurement is from small businesses, slightly less than one-half of which is associated with subcontract awards. Although estimates of small business activity by weapons system are not tabulated, it is reasonable to expect that a sizeable portion of any weapon

system's workforce (even at the prime and higher tier subcontractor levels) would be working for small businesses. Any economic adjustment or conversion approach must address, therefore, subcontractor as well as prime contractor displacement problems.

PART II

PREVIOUS ADJUSTMENT/CONVERSION EXPERIENCE



## Chapter 4

### MILITARY BASE ADJUSTMENT EXPERIENCE - AN OVERVIEW

The civilian reuse of former military bases by a wide range of communities across the nation provides the broadest national experience in economic adjustment available. The base reuse economic adjustment experience also demonstrates that communities can be successful in offsetting major defense cut-backs when the federal agencies (and states) provide coordinated assistance in behalf of the impacted area. This actual civilian reuse experience, however, does not support the national advanced planning conversion approach suggested in the House-Senate Conference Report in three important respects:

- \* Basic Local Responsibility: The basic responsibility for the reuse of the former facilities and for the necessary local adjustments has rested with the affected communities themselves--with coordinated assistance from the member agencies of the President's Economic Adjustment Committee.
- \* Facility-by-Facility Reuse: The civilian reuse of former military facilities has occurred on an individual building-by-building reuse basis with the community attracting specific expanding private sector employers or other public uses.
- \* Limited National Advanced Planning: Most communities have prepared comprehensive base reuse plans to guide the redevelopment process after the realignment action was certain. Unfortunately, few communities have undertaken advanced contingency planning--even when a realignment was imminent.

#### Civilian Reuse Experience

A detailed summary of the 94 completed military base economic adjustment projects for the twenty-year period from 1961-1981, as reported by the affected communities, is included at the conclusion of Appendix J. This summary of the community achievements indicates that the communities have been successful in replacing the loss of 87,703 former DoD civilian jobs with 123,777 civilian jobs at the former bases; another 9,362 off-base jobs were directly attributable to the base reuse process. The great majority (88 percent) of these jobs involved private sector employment opportunities. The job generation experience in five other community projects completed since 1981 is also included at Appendix J.

#### Facility Reuse Experience

The adaptation of former military facilities has occurred on an individual facility-by-facility basis, usually with expanding branch plant operations at the former bases or with new small firms seeking inexpensive facilities. The communities themselves have been responsible for attracting new tenants.

In recent years, the community planning assistance resources under 10 USC 2391 have been helpful in prompting effective reuse of the former base facilities. Few communities have requested community planning assistance under 10 USC 2391 during the candidate base realignment period. Most communities have expended their energies contesting the base realignment decisions during the candidate realignment period.

#### Federal Assistance

The basic responsibility for the community economic adjustment process has rested with the communities themselves--rather than with the federal agencies or alternative use committees as suggested in the office of conversion proposal. Under the auspices of the President's Economic Adjustment Committee, the federal agencies have served in a facilitator role in helping the communities implement their local recovery plans and their base reuse plans.

During the 1973-80 period involving major base realignments, the EAC member agencies provided about \$80-90 million annually in assistance to the defense impacted communities, as also summarized by agency at Appendix J. Many of these assistance programs have been curtailed significantly in recent years.

#### Post-1976 Realignment Adjustment Complexities

The Grace Commission and the press have described the limitations imposed by Congress on normal military base closures and economies. Equally as serious has been the effect of these Congressional limitations on the willingness and capacity of individual communities to implement effective economic adjustment programs following the prolonged base realignment decision process.

In 1976, the U.S. Circuit Court determined that the National Environmental Policy Act (NEPA) did not require the Military Departments to complete a full environmental impact statement (EIS) on the socio-economic effects of military base realignments when an environment assessment indicated that there was no threat to the bio-physical environment.

Congress, nevertheless, proceeded to legislate special studies under 10 USC 2687 on the fiscal, budgetary, environmental, and local economic effects of defense realignment actions for bases employing 300 or more civilians. Congress also prolonged other specific base closures by legislation.

These studies on the fiscal, budgetary, environmental, and local economic effects of the defense realignment actions under 10 USC 2687 require about one year to complete.

These studies have not been realistic, as highlighted by the actual 1978 unemployment rates for four communities affected by the 1977 realignments in relation to the 10 USC 2687 study forecasts (see Appendix J). Any community is certainly entitled to request reconsideration of a realignment proposal, but the Section 2687 studies have served to alarm the impacted communities and to undermine effective community economic adjustment. For instance, the mayor

of Big Spring, Texas commented on the harmful effect of the 10 USC 2687 study on the local recovery effort for Webb AFB as follows:

"The Environmental Impact Study (i.e., the 10 USC 2687 study) was ridiculous. It cost this community hours and hours of wasted time, expense, and useless effort. It cost the taxpayers even more when you consider how much money the military spent for the study. It put our community into a waiting period when nobody took out building permits, no new business or industry would consider us as a location and everyone's nerves were frazzled."

In summary, the 10 USC 2687 studies have delayed necessary economies in the Defense budget; the studies have not encouraged the affected communities to initiate adjustment plans; and the studies have added to the local discouragement and gloom. There are good grounds for revising the 10 USC 2687 study requirements from a Defense budget perspective; there are equally strong grounds for revising this 10 USC 2687 study requirement from a community economic adjustment and recovery perspective.

#### Improvements to the Federal Property Disposal Process

As noted at Appendix J, GSA is presenting several proposals to expedite the property disposal process:

- \* Authorizing the General Services Administration (GSA) to proceed with all negotiated sales of surplus property valued at \$1 million or less. This would require an increase in the review threshold by the appropriate Congressional Committee from \$1,000 on each property to \$1 million.
- \* Excluding sales of surplus real and related personal property from the provisions of Section 102 of the National Environmental Policy Act of 1969, which has been interpreted to require a GSA environmental assessment or even an environmental impact statement when GSA sells a surplus property to a local government for new job-generation or public uses.
- \* Changing the requirement for GSA to seek anti-trust advice from the Attorney General prior to completing the disposal of surplus real and related personal property to private interests. The requirement should be changed from \$1 million in acquisition costs to \$1 million in estimated fair market value. For instance, the acquisition value of a surplus missile silo is a poor measure of the facility's alternative use value.
- \* Permitting related personal property (i.e., kitchen equipment, air conditioners, hospital beds, etc.) to be transferred with the real property. This will permit a community

to reuse a former military facility immediately. (This suggestion is in addition to the basic GSA recommendations above.)

In summary, the actual civilian reuse experience for former military bases does not support the national advanced planning conversion approach. A further discussion on the conversion of former military facilities to civilian uses is included at Appendix J.

## Chapter 5

### PREVIOUS COMMUNITY ECONOMIC ADJUSTMENT EXPERIENCE\*

This chapter summarizes in general terms the key findings of an investigation of defense-related industrial cutbacks in four communities:

|                        |                        |
|------------------------|------------------------|
| Wichita, Kansas        | Aircraft industry      |
| Huntsville, Alabama    | Space program          |
| Taunton, Massachusetts | Anti-ballistic missile |
| Hagerstown, Maryland   | Aircraft industry      |

The cutbacks in Wichita, Huntsville and Taunton occurred during the period between 1970 and 1975. In each of these communities, the analysis focused on both the initial response to the dislocation and the longer-term results of the actions taken. In Hagerstown, where Fairchild Industries closed its plant at the beginning of 1984, the focus was on looking at the state's role in supporting the local adjustment process.

While there were many important similarities in the problems, responses and results, there were also key differences that related in large part to the uniqueness of each setting. Of primary importance to successful recovery is the degree of economic diversification of the communities and regions involved.

The discussion and findings presented here are based primarily on field visits to the four sites that were conducted in late March and early April of 1985. In addition, written reports and data on local conditions were reviewed. The core of the site visits were interviews with a cross section of public and private sector leaders who either played a key role in responding to the dislocation or are influential in local development today.

#### Effectiveness of Previous Programs

This section begins with brief descriptions of the dislocations in Wichita, Huntsville and Taunton.

Wichita: The aircraft industry has played a major role in Wichita's economy for over 40 years. During the height of B-52 production in 1956, the Boeing Company, for instance, employed 35,000 people in the community. When B-52 production ended in 1963, Boeing in Wichita shifted heavily into support for commercial aircraft production, building the fuselage for the 737 jet and then making parts for the Super Sonic Transport (SST). By 1970, however, the commercial airplane market collapsed, the SST program was terminated, and military work was scarce. In late 1971, employment at the Boeing plant was down to 4,200. Unemployment in this city of 270,000 people reached 14 percent.

---

\*This chapter was prepared by the National Council for Urban Economic Development.

The Economic Adjustment Committee (EAC) and the Office of Economic Adjustment (OEA) played an important role in focusing action in the community. The Wichita Regional Economic Adjustment Committee (WREAC) was created to involve public and private leadership in developing an "action" strategy response to the problem. OEA organized a federal interagency team to assist the community's efforts. The strategy identified a set of public investments that would promote diversification of the economy. The thrust of the diversification was to make Wichita a regional center for services, transportation, manufacturing, and tourism/recreation. Local dollars and considerable federal funding were committed to projects ranging from basic infrastructure to support economic growth (i.e., roads, water and sewer, and flood control) to new industrial facilities, a major exhibition coliseum, and amenities.

By 1974, Wichita was being praised as a "pocket of prosperity" in a troubled national economy. Major firms such as NCR, Metropolitan Life and J.I. Case had opened new facilities in the community, and a large number of smaller firms had started, expanded or located in the city. The city's unemployment rate of 3.7 percent did, however, obscure the fact that roughly 20,000 people left town after the dislocation.

Wichita continues to be heavily dependent on the aircraft industry and defense contracting for its manufacturing employment. About 60 percent of current manufacturing jobs are in aircraft. It is the home of Beech Aircraft, Cessna and Gates Learjet, in addition to the restructured Boeing Military Airplane Co. In order to support these firms, the city has used innovative tax policies and provided considerable industrial revenue bond (IRB) financing. The other significant feature of the economy is its tradition of entrepreneurial activity. Two examples of this entrepreneurial spirit are the Pizza Hut restaurant chain, started by a local businessman, and the nation's first university-based program in entrepreneurship started at Wichita State University.

Huntsville: Huntsville's growth as a high technology center is tied directly to the reactivation of Redstone Arsenal in 1950, the arrival of Dr. Wernher von Braun and his team of technicians the same year, and President Eisenhower's establishment of the NASA Marshall Space Flight Center in 1960. These events transformed a quiet mill town of 16,000 people (1950) to a boomtown of 140,000 residents (1970) where "engineers couldn't be hired fast enough." In the mid-1960s, it is estimated that about 70 percent of local jobs were tied directly to government missile and space activities.

Dr. von Braun is credited with focusing local attention on the need to diversify the economy away from federal R&D. In the early 1960s, two key steps were taken to support the community's growth as a diversified high technology center. These were the creation of the University of Alabama at Huntsville in 1960 and the establishment of a 3,700-acre research district in 1963. Between 1967 and 1973, over 16,000 jobs were lost in the community as a direct

result of the Department of Defense and NASA cutbacks. However, these reductions had a "moderate" impact due to considerable local growth tied to a very effective industrial development program. Initial diversification efforts were successful in bringing national firms like Automatic Electric, Dunlop Tires and PPG Industries into the community. The construction of a major civic center in 1975 also helped support new investment. Two recent projects--the Huntsville-Madison County Jetplex/Foreign Trade Zone Industrial Park and expansion of the Cummings Research Park--should help to fuel future growth. There has been limited direct federal involvement and funding in Huntsville's adjustment.

Many of the firms spawned by federal R&D have become major corporations. These include SCI, Intergraph, Universal Data Systems and Brown Engineering. In addition, Huntsville continues to be a strong area for entrepreneurship. Local officials estimate that roughly 30-40 new high technology firms are being started in Huntsville each year, especially in the computer field. The ability of these firms to serve commercial markets will be vital to continued growth.

Taunton: In 1972, the Raytheon Corporation announced that it would be closing its facility outside Taunton, Massachusetts, eliminating 1,400 jobs as a result of the termination of the Safeguard Anti-Ballistic Missile System. Established in 1958, the Raytheon plant was the largest single employer in the area reaching a peak of 2,500 workers in 1967. Under the leadership of the city's mayor, the Taunton Area Task Force, composed of prominent public and private officials, was mobilized quickly to address the dislocation. The Task Force concluded that the reemployment of laid-off workers and reuse of the facility were the key objectives for immediate action. The longer-term objective would be to diversify and expand the economic base of the community.

The Economic Adjustment Committee and the DoD's Office of Economic Adjustment played an important role in helping to focus local action and in providing an entry to federal and state programs and resources. Raytheon, with assistance from the state employment service, carried out an effective reemployment program that resulted in half the laid-off workers (nearly all who asked for help) obtaining new jobs in a few months. About half of these placements were in other Raytheon plants. The plant was never reoccupied by a major tenant, but a number of smaller tenants, including a Raytheon warehousing function, occupy about 80 percent of the facility. It is, however, operating well below its economic and employment potential.

Federal funding has played a key role in supporting the local diversification efforts. An Economic Development Administration (EDA)-funded feasibility study led to an EDA public works grant, matched by local funds, to construct the Miles Standish Industrial Park. OEA supported the city's successful effort to obtain the state-owned property needed to construct the industrial park as well as develop a portion of interstate highway that enhances the park's viability. A local consortium of banks established a loan fund for development of the park and IRBs have been an essential ingredient in financing businesses located in Taunton. OEA also supported Taunton's application for an Environmental Protection Agency (EPA)-funded wastewater treatment plant.

Taunton's economic condition has fluctuated greatly in the 12 years since the closing. Prior to the closing, unemployment in the area was 6.3 percent. Following the closing it rose to 7.5 percent and was as high as 13 percent and as low as 5 percent. Today, Taunton's economic prospects appear to be strong--the industrial park is filling up quickly. Actions taken in the wake of the Raytheon closing are enabling the city to benefit from the state's strong growth.

### Factors Contributing to Success

Experience in these three communities confirms much of what is regarded as common sense in the field of economic development. Successful adjustment depends on having the right people involved, evaluating local strengths and weaknesses, taking timely action, building on local assets, and balancing short and long-term needs. The initial response should be aimed at softening the impacts of a dislocation by reemploying laid-off workers, attempting to reuse the industrial facility, and taking advantage of any targets of opportunity for quick job creation. Two underlying concerns must also be recognized. First, local economies function in the context of regional and national economies. Often forces beyond local control influence success or failure. Second, successful adjustment requires a share of luck--that is, the right mix of good timing and good fortune.

Field investigation suggests that the key elements of successful local initiatives can be divided into three stages: (1) organizing and initiating action; (2) short-term adjustment; and (3) longer-term recovery. In each of these stages some of the key elements are specific to the dislocation itself while others are part of the community's longer-term capacity to carry out an effective economic development program. (The federal role in responding to defense-related dislocations is discussed in the last section of this chapter.)

- \* Organizing and Initiating Action: A major dislocation is an economic emergency that can harm many people and threaten the well-being of communities. Often an initial sense of frustration and worry can prevent effective action. What is needed is a quick response that addresses the immediate problems and lays the foundation for longer-term recovery.

A number of factors can make it more likely that the community will start out in the right direction. Early information of the potential dislocation can provide a start-up period that enables careful thinking while relieving some of the pressure. This early information can be used to respond to workers' needs, develop employment alternatives, identify resources, and investigate options for reusing the facility. Public sector leadership is important in mobilizing the community collaboration required to initiate effective action. The task is to bring together the key public and private sector leaders, perspectives, and resources that must be brought to bear on the situation. Establishing clear and achievable priorities and defining institutional responsibilities will serve to focus attention on specific objectives.



Solid information will speed action and reduce the likelihood of confusion and conflict that rumors can cause.

- \* Short-Term Adjustment: Once organized, community leaders will want to develop quickly an understanding of the immediate problem and undertake short-term actions to soften the blow. In the short term, the key objective is to reemploy workers laid-off by the dislocation (if possible in the same community). In cases where a major dislocation has occurred in an area experiencing high job growth, this may be possible through a modest program of job search assistance and placement services. Where the local economic growth is limited, investments in training and other steps may be required. In some instances, there may be opportunities for near-term creation if efforts were underway prior to the dislocation.

Reemployment is not the same as job replacement. To make itself whole again, a community must replace the jobs lost and the private investment that undergirds the local economy. Attention must shift from worker focused actions to economic development initiatives. Where an industrial facility has been vacated, its reuse and marketability should be assessed promptly. Finding a new tenant for the facility may be a longer-term proposition and should not consume all of the community's energy.

A solid assessment of development possibilities should be made in offsetting any major employment loss, especially where they involve large public investments. False steps can be costly. On the other hand, delays can dissipate development impetus or momentum. It may be possible to accelerate initiatives started before the dislocation. Dislocations can often be the catalyst for concerted action on worthy projects that previously lacked consensus and resources.

- \* Longer-Term Recovery: Having a good economic development program in place is the key ingredient to longer-term success. Each of the communities visited had already initiated development programs involving strong public and private sector participation. The dislocations could have undercut these efforts had they not been able to respond effectively and augment ongoing initiatives with additional resources. The dislocations did not significantly alter the direction of local development in these communities. They did underscore the importance of greater economic diversification and they also led to an increase in local development capacity.

Today, the economies of these three communities are relatively strong as are their future prospects. In each case, major investments/development initiatives made in response to the dislocations have contributed to longer-term recovery.

They have also benefited from favorable regional and national economic conditions and in part from categorical federal assistance programs which could be targeted to the impacted communities. For the most part, these categorical programs are no longer readily available. Taunton's industrial park, developed with determined effort, is now capitalizing on new investment coming south from the Boston area. Wichita and Huntsville, as centers of entrepreneurial activity, have strengthened their competitive advantage with public investments aimed at improving the climate for new enterprise development and high technology growth.

It is important to note that none of these communities decided to stay away from future defense-related business as a result of the dislocations. All, however, have made a serious effort to diversify their economies.

#### The Emerging State Role - The Hagerstown Case

The recent closing of the Fairchild Industries' plant in Hagerstown was examined to learn more about the emerging state government role in responding to defense-related cutbacks. This dislocation resulted in the elimination of 1,000 jobs involved in the production of civilian aircraft components. (The closure of the military A-10 production line had previously displaced 500 employees.) The actual impact was less severe with an estimated 700 workers being placed in other jobs locally or taking early retirement. Fairchild played a strong role in helping to place some of these workers in its own plants and in other area companies. Equally important, the company donated the 1,000,000 square foot building to the State of Maryland (thereby also enabling the company to receive substantial tax benefits). Unemployment in the area is currently 12 percent.

The Maryland Economic Development Corporation (MEDCO), a state public corporation, was created to market the facility. MEDCO has been working closely with the Washington County Economic Development Commission to find potential tenants. The parties involved believe that the building is marketable. Hagerstown is well-situated, being roughly 75 miles from both Baltimore and Washington at the junction of two interstate highways. The area has an excellent quality of life and a strong labor force. Businesses locating in the community would also qualify for the state's enterprise zone incentives.

In early April 1985, the State passed legislation allowing Citicorp to operate full-service banking in Maryland in exchange for establishing a credit card processing facility in Hagerstown that would create 1,000 jobs. The Citicorp deal is a unique opportunity for the community and would be a major step in diversifying an economy based largely on manufacturing and agriculture. The drawback is that Citicorp wants to demolish the Fairchild plant and construct a new facility. Recognizing that razing the building would waste an "irreplaceable" asset, the State is continuing to look for a tenant (or tenants) in which case Citicorp could be moved into a local industrial park.

Unfortunately, neither the State nor the county can afford the cost of maintaining the building indefinitely (estimated at \$100,000 per month). If another tenant is not found soon, the building will be demolished to accommodate Citicorp's desire to be operating by June 1986.

#### Economic Adjustment Response to Industrial Cutbacks

The field investigation suggests that the Economic Adjustment Committee's and the Office of Economic Adjustment's role in the four communities was generally useful and appropriate and in some respects essential. EAC/OEA's involvement can support actions in all three stages of the adjustment process described above. In Wichita and Taunton, in particular, EAC/OEA involvement helped to focus attention on the problem and to spur positive "strategic" action. OEA helped the communities to get organized, and assisted in analyzing the problem. It should not be assumed that the local "push" that got things done would have been as forceful or effective without EAC/OEA involvement. In addition, EAC/OEA acted as an advocate for these two communities by providing access to additional federal development resources and, in some instances, supporting efforts to get state action. It is not clear how important the prospect of a commitment of federal dollars was as an inducement to local action.

In Huntsville, on the other hand, there was little direct EAC/OEA involvement beyond technical assistance. The community was anxious to do things on its own and despite major cutbacks, economic growth was continuing. In Hagerstown, the dislocation occurred at a time when the rules of the game had changed. Still, the community did receive an EDA grant to study diversification options and the reuse of the facility. It also turns out that the problem has not been as severe as initially thought.

In addition to the role that EAC/OEA currently carries out, a number of other elements might be considered as part of the EAC/OEA economic adjustment response to industrial cutbacks. These include the ability to:

- \* Arrange for technical support from peers who have been involved in similar defense-related cutbacks.
- \* Provide funding to evaluate the feasibility of reusing the vacant industrial facilities.
- \* Maintain an inventory of vacant defense-related industrial facilities.
- \* Provide funding to develop substantive adjustment strategies to guide longer-term response to dislocations.
- \* Encourage spin-off businesses from major defense contractors operating in affected communities.
- \* Monitor changes in defense weapons systems activity to help communities anticipate major dislocations.

The job replacement experience in these four defense-dependent communities took place over a long-term period (generally a minimum of three to four years). As highlighted in Chapters 12 and 13, many of the major companies helped to place their affected workers immediately. But, the successful community economic development efforts often did not reemploy the same individual displaced "defense-related" workers which is a key objective of the conversion approach.

The job replacement experience in these four communities took place over a long-term period. In most instances, the community recovery efforts did not help or directly employ the displaced "defense-related" workers, a central tenet in the conversion approach.

It is important to note that DoD has the capability under 10 USC 2391 to provide community planning assistance where there is a sudden industrial cut-back involving 2,500 or more workers. Our analysis of Taunton and Hagerstown suggests that it would be useful in future defense-related industrial dislocations to reduce this statutory threshold to about 1,000 workers (or to 5 percent of an area workforce, whichever is the lesser number in the case of very small cities); and to permit DoD community planning assistance in the case of the conclusion of major weapons system production programs.

State and local capacity to plan and implement development initiatives is certainly far stronger than it was 10-15 years ago but this state capacity is also uneven across individual states. States have begun to carve a strong niche in the areas of training and marketing in support of industrial development. Many states have also expanded their involvement in business development financing. These roles appear to be helpful as elements of the "tool kit" needed to respond to dislocations. This means that resources could be used more effectively. It does not appear, however, that state resources and responsibilities have increased sufficiently to deal by themselves with major defense-related dislocations. In addition, states do not necessarily feel any special obligation to give priority to dislocations resulting from DoD decisions and cannot perform all of the functions possible for a federal dislocation.

In summary, the economic adjustment scene has changed significantly during the past 15 years. There are fewer categorical federal assistance programs which can be applied today toward offsetting industrial cutbacks, in comparison with the 1970-75 period. The states have had a far stronger role in recent years. Local organization and private sector investment are still the key elements in successful local economic adjustment to major dislocations. Any federal economic adjustment or conversion program should operate in cooperation with, and should reinforce, state economic development activities.

A full discussion of adjustment efforts in the four communities is reflected at Appendix K.

## Chapter 6

### EUROPEAN CONVERSION EXPERIENCE\*

The goal of this effort was to follow-up on an earlier study of European policy instruments available to ease the adjustment to reduced levels of military spending.<sup>1</sup> That study, focusing on the 1972-78 period, found few relevant European examples or mechanisms to aid effectively the transition of military productive capacity to civilian output. The updating effort was conducted during January 1985 in the United Kingdom, France, Sweden, and the Federal Republic of Germany (West Germany) supplemented by mail and telephone communications with sources in Belgium, Holland, and Italy.

None of the countries studied appeared to demonstrate appreciable concern over the economic and social strains which might result from a substantial reduction in the level of military expenditures. The principal reason for this attitude is that military expenditures are seen as a normal part of the government budget and are likely to remain that way. While military expenditures represent a relatively small share of the gross national product, they do show some cycling over time reflecting changes in geopolitical conditions and the more prosaic completion of large procurement projects with gradually lengthening periods of slack in between.

The typical government position is that cycles in military markets are sufficiently familiar to permit most firms to plan in advance for adjustment and the development of alternative products and markets. In other words, preparation for and adjustment to variations in military procurement is viewed as a normal managerial responsibility in a dynamic economy. This pattern is probably made more explicit in the Federal Republic of Germany than in most other countries, but the position is not unique. The Swedish government has demonstrated more interest in the general issue of economic conversion, as evidenced by several government studies and reports, but even there, few explicit policy actions can be identified.

A distinction must be made between government positions and the concerns of minority political parties and private groups. There is no shortage of

---

\*This chapter was prepared by Professor Bernard Udis of the University of Colorado.

<sup>1</sup>Bernard Udis, From Guns to Butter: Technology Organizations and Reduced Military Spending in Western Europe (Cambridge, MA: Ballinger Publishing Company, 1978).

concerns about easing the adjustment process among certain trade union groups, "peace" groups, and out-of-power political groups.<sup>2</sup>

It should be noted, however, that while questions in the West German Parliament concerning the utilization of defense industry production capacity in the event of disarmament agreements often are raised by individual Social Democratic legislators, the official position of the current Christian Democratic government is almost indistinguishable from that of the predecessor Social Democratic administration; namely, that the responsibility of planning to meet such transitions is principally that of industry.

All the countries studied have an array of existing policies which might be helpful in easing a transition to lower levels of military spending, which collectively might be described as industrial policies. Such policies typically fall into two categories: micro-policies designed to help firms in depressed traditional industries and their dependent workers and communities; and specific policies whose purpose is to aid promising new industries (usually based on advanced technology) in gaining a foothold in the market. What these policies have in common is their going beyond the macro-impersonality of traditional monetary and fiscal policy. They include regional development programs, labor market programs, financial aid to firms at below-market rates of interest, subsidies for research and technology, export promotion, aid to innovation, etc. They are described in some detail in Appendix L. Despite their diversity, they are linked by the fact that they were not designed

---

<sup>2</sup>perhaps the most widely publicized of these is the Lucas Aerospace Plan. While it has begun to assume the qualities of a "movement" [see David Elliott and Hilary Wainwright, "The Lucas Plan: The Roots of the Movement," in Suzanne Gordon and Dave McFadden (eds.), Economic Conversion: Revitalizing America's Economy (Cambridge, MA: Ballinger Publishing Company, 1984), pp. 89-107.], the reality appears far removed from the image. The Corporate Plan is presented in a document prepared by the Lucas Aerospace Combine Shop Steward Committee in the mid-1970s. It is a curious mixture of criticisms of capitalism and proposals for civil production in six major areas, outside of aerospace. The plan reflects a joint desire to prevent unemployment as defense orders decline and to produce "socially-useful" products. According to a Lucas Aerospace executive, two efforts were attempted. One which focused on the production of electric kettles for the consumer market was a substantial failure. In the second, Lucas management in an old factory complex facing closure in Bradford asked the union to recommend product ideas within the aerospace line. Apparently, the resulting suggestions were quite helpful in the development of samarium cobalt engines which, paradoxically, are utilized in missile production. Not surprisingly, the different parties have widely differing explanations for the relative lack of success of the plan. Two principal issues are raised by the Lucas experience: the role of workers and their representatives in cooperating with management on new product development, and how far afield firms may expect go to find new products which they are likely to be able to produce and market effectively.

specifically to aid a military-to-civil transfer of resources. Their origins are, of course, less important than their possible effectiveness in easing the strain of economic conversion.

The logical question one would wish to ask is which policy measures "work" and which do not. Unfortunately, the answer is more complex than that. There is not an exact formula for successful economic conversion. Thus, similar measures in the different countries do not yield similar results. This should not be surprising since every country's economic history contains a record of firms in the same industry and at the same point in time with widely differing profitability. Conversion or transfer of resources from military to civilian use is an example of adjustment to changing market pressures. Since the challenge to firms in this situation is to "adapt or die", one may reason that national environments which encourage such adaptation will enjoy higher success rates. Therefore, the society's views and attitudes to adaptability and change may be as important as specific policy measures in explaining differential success.

In this context, the views of a French banker were particularly interesting. He expressed concern that the French economy's adaptability to change would remain low as long as French society continues to draw its leaders essentially from two institutions of higher education: the Ecole Nationale d'Administration, and the Ecole Polytechnique. While acknowledging them to be excellent educational institutions, he saw them as stifling new ideas with their oppressive application of the old school tie or "old boy's network", thereby effectively locking the door to the "self-made man" type of executive who might be more inclined to consider less traditional approaches to problem solving.

A promising case of a company moving to reduce its dependence on military sales is the West German aerospace firm, Dornier. Its military share of total sales declined from 65-70 percent in 1977 to about 50 percent currently. In private correspondence, a Dornier executive emphasized the importance of careful planning, patience, and the willingness to bear risk. Thus:

"This increase in the share of civilian market sales--as you can well imagine--did not just happen by chance. It was part of our company policy during the last ten years. The long-term planning of our DoD (Ministry of Defense) gave enough early warning that reduced defense business had to be compensated by . . . civilian programs. This policy meant taking on subcontracting work for Airbus on not too advantageous and risk sharing terms. Millions of marks for investment in infrastructure, special machinery and tooling came out of our own pocket (these kinds of costs normally are carried by the government, for military programs). We had to invest heavily not only for R&D, but series preparation and all the production work required to run a program like our Dornier 228 Commuter Aircraft, with a return on investment (break-even point) in a very distant and uncertain future. Dornier also pushed ahead with completely different programs (products) like the kidney stone

Lithotripter, entering a so-called 'new game' like the medical market (diversification). To expand our traditional textile machinery field is a comparatively easy 'game.' Therefore, yes, the company has plans to increase the civilian market share and will have to continue in the future to do so."

The importance of flexibility, noted above, applies to workers as well as to managers. European workers have long been noted as tradition-bound and resistant to geographical mobility. Sweden's active labor market policy appears to deal with these issues directly. An impressive program to subsidize geographic mobility exists. It includes actual moving expenses, starting grants and per diem allowance to cover additional costs of double residency. Labor market training and extensive vocational counseling are provided to participants.

Regional development programs exist in each country, but they all face a common dilemma: the existence of depressed areas attesting to their loss or lack of attractiveness to industry. Efforts to develop new industry or to encourage the expansion of existing industry in such regions require measures to counteract this perception of industrial unattractiveness. In an ideally operating economy, both labor and capital would be freely mobile, responding to the drive for economic gain. The self selectivity of emigrants is well known, leaving depressed communities populated by older, less educated, and more risk-averse people. Such persons are often less attractive to potential employers. The new technology-based industries are viewed as more mobile than more traditional industries which required proximity to raw materials and markets. Thus, high technology industries are often characterized as "foot-loose" and substantial competition occurs among communities to attract them. However, such firms have tended to concentrate in areas with easy access to research-oriented universities and laboratories, and highly skilled workers. Evidence of the success of regional policies is scarce, as it is difficult to create locational advantages where they do not exist.

Social and political realities, however, together with occasional market failure, have prevented governments from relying completely on a market-dominated industrial location process. Early in 1984, the French government introduced an ambitious new package of regional development incentives focusing on what are called "Conversion Poles." The program subsidizes new firms, attempts to influence wage schedules and provides technical training. It is difficult to evaluate the program since it is still new. Individual business executives, however, seem unconvinced of the effectiveness of the program. Thus, a French electronics executive observed that it is more efficient to relocate employment and production among existing company facilities than "to start from scratch at a new site."

A Belgian aerospace industry official described a government program to aid economically depressed regions as "not very effective because they support a passive attitude (on the part) of the companies involved. They get (dependent) on Belgian government support and lose all dynamic personal initiatives."



On the other hand, the Confederation of British Industry supports, with reservations, a continuation of regional policy in the United Kingdom.<sup>3</sup>

Individual country programs are diverse in their details and in their underlying philosophies. They vary substantially in their views of the appropriateness of governmental intervention. France is probably at the more active-role-for-government end of the continuum, with a well-developed set of industrial policies. However, all countries accept the idea of strategic industries which are crucial to national independence and well-being. Thus, an official of the Swedish Industrifonden commented that the formation of his organization in 1979, in part, reflected a concern over the effects on important firms of declining expenditures for military research and development and nuclear energy. Setting up the fund was "another way for the government to support large projects". Saab's civil aircraft work with Fairchild Industries of the U.S. and Volvo Flygmotor's civil aeroengine projects with Garrett, General Electric, and Pratt and Whitney, also of the U.S., received substantial financial aid from the Industrifonden.

Also of importance is the government position toward the export of military equipment. In two cases, Sweden and the Federal Republic of Germany, substantial government-imposed inhibitions to the export of military equipment exist, essentially ruling out expanded military exports as an adjustment path.<sup>4</sup> In the others, increased emphasis on exports is a predictable policy.

It should be noted that in most of the countries studied, as in the U.S., military production typically occurs in firms which also produce civilian products. Indeed, in some cases such as electronic components and vehicles, what makes a product "military" is the nature and identity of the buyer. Obviously, the adjustment problem will be more severe when there is a dependence on military customers and few alternative uses of the product. Similarly, the problem will be more severe if the workers, equipment and plants engaged in military production are more specialized and harder to transfer to other uses. This suggests the importance of studying these particular issues as part of a strategy designed to ease transitional problems. Where military products are produced by non-specialized military producers, such products are often seen as "fillers" to occupy company resources during slack periods of civil product sales. Among military producers, export sales often play a similar role.

---

<sup>3</sup>"CBI Submission to the Secretary of State for Trade and Industry on Regional Industrial Development," May 1984; and "The Future of Regional Policy: CBI Recommendations to Government," May 1983.

<sup>4</sup>There is some evidence that such policies may be interpreted in a more pliant way to aid some industries through difficult times. Thus, a West German executive noted, "Even our strict arms export regulations are handled by the government in a more flexible manner to allow, for instance, for export of submarines and frigates."

Sweden's policy of armed neutrality has placed it in an interesting position related to reduced military outlays. Its major military project today is the production of a successor aircraft to the Viggen. The successor, designated Gripen, will be produced with about a fourth to a third of its parts coming from abroad. This arrangement, which resembles tapered vertical integration (e.g., an auto producer operates steel mills to meet a portion of its steel requirements), insulates domestic industry, to some extent, from the full impact of reduced procurement. This tactic is obviously not available to all countries. Even in the case of Sweden, other factors were responsible for this outcome.

These strategies (to order military equipment from abroad or export military equipment) to ease the strain of reduced domestic military expenditures both illustrate the importance of the context in which reduced military expenditures might occur. Thus, a widespread movement toward disarmament at the international level would be a greater challenge to policymakers attempting to minimize the economic dislocations, since under these circumstances the export market for arms would be reduced.

In conclusion, this further evaluation of European policies found few relevant European conversion examples or mechanisms to aid effectively the transition of military production capacity to civilian output.

A further discussion of the European adjustment approaches is reflected in Appendix L.

## Chapter 7

### PREVIOUS INDUSTRIAL CONVERSION EXPERIENCE\*

In 1970, the Senate Government Operations Committee asked major defense contractors how they planned to adjust to reductions in defense spending when the Vietnam War ended. Several of the major DoD prime contractors expressed reluctance to consider developing civilian products unless the government was prepared to support their efforts. This reluctance on the part of major contractors was understandable given the perceived difficulties associated with transferring resources, both human and capital, specifically deployed to support defense production in large, single-purpose, defense industrial facilities.

Major defense prime contractors face three hurdles in attempting to adjust to reductions in defense spending at single-purpose, defense industrial facilities. A contractor must:

- \* Identify and develop appropriate technologies for civilian use. Consequently, a major defense-oriented firm (or any firm) attempting to convert must design its new products for a commercial marketplace.
- \* Adapt the firm's production processes, except in those few instances where there is a direct or similar civilian use for the same product.
- \* Market the new product. Marketing to a single buyer, the government, requires skills very different from serving a national market made up of millions of consumers.

In spite of these hurdles, numerous defense contractors attempted to shift from military to civilian markets during the 1970's when the demand for defense goods declined. The successful transitions to civilian production followed a corporate diversification approach--with the defense-oriented firm acquiring an outside expertise in a new industry or with the firm applying its defense technology over a long period (often 5-10 years) to develop new civilian applications.

Several firms dramatically shifted their business from military to civilian production. Selected corporate experiences were studied to determine whether conversion offers a normal tool for adjusting to major changes in defense weapon system programs.

The following criteria were used to determine whether the adjustment efforts examined were bonafide examples of conversion:

---

\*This chapter was prepared by Robert DeGrasse of the Orkand Corporation.

- \* Did planning for the conversion effort begin in advance of reductions in the Defense budget, and did this planning process include the participation of the workforce?
- \* Was a substantial portion of the firm's pre-existing resources, both human and capital, employed on the new project?
- \* Finally, was the firm able to establish a competitive position within the new commercial marketplace?

In addition, a determination was needed as to whether and how the adjusting firm was able to clear the three hurdles discussed above. How were the new products developed? Could elements of the existing production process be applied to the commercial project? And how was marketing expertise developed to support promotion of the commercial project?

### Case Studies

This chapter illuminates the prospects and problems of defense industrial transition to civilian markets by examining the experiences of defense contractors that adjusted to reductions in military spending during the late 1960's and early 1970's. Case studies, based largely on site visits and interviews, were performed on three firms:

- \* Kaman Corporation, in Bloomfield, Connecticut;
- \* Acurex Corporation, in Mountain View, California;
- \* Boeing Vertol, in Delaware County, near Pennsylvania.

These corporations were chosen because each undertook a major effort to reorient its business base. All three firms were heavily dependent on aerospace contracts during the late 1960's. Boeing Vertol was a major producer of military helicopters. Kaman was a medium-sized subcontractor that also had produced helicopters. Acurex was a small research and engineering firm specializing in the thermodynamics of reentry vehicles.

In addition to the three case studies, data was also collected on Rohr Industries and Raytheon Corporation. Summaries of the adjustment efforts undertaken by Kaman, Acurex and Boeing Vertol appear below.

Kaman: The major impetus to diversify Kaman Corporation's business came in 1963 after the firm was essentially excluded from the consolidated helicopter purchase ordered by Secretary of Defense Robert McNamara. Up until that time, Kaman had been primarily a producer of military helicopters. After being shut out of this market, the company first turned to subcontracting for other defense firms and won a major contract with Lockheed to participate in the C-5A military air transport project.

The company president, Charles Kaman, began developing his guitar hobby into a major business enterprise at this time. He was encouraged in this pursuit by a visit to the Martin guitar factory, where he learned that production techniques were out-of-date and that little was known about the physics of vibration. The knowledge of acoustics Kaman had developed in the helicopter business was readily transferable to the new enterprise. By 1966, the Ovation guitar line was sufficiently developed to warrant a separate division.

The need to diversify became more urgent during the late 1960s when a dispute arose with Lockheed over Kaman's contribution to the C-5A project. Following an expensive legal battle, Kaman eventually posted a \$2.5 million loss in 1968. It was at this time that Kaman began to "diversify by design." A major focus of this intensified diversification effort was the music industry.

Kaman purchased a network of music distributors to provide commercial outlets for their guitars. The firm also pursued celebrity endorsements from such performers as Glen Campbell to help generate name recognition for its Ovation guitar line. The cost of the guitar was held down by employing composite materials and molding techniques developed for aerospace applications. At its peak, guitar production employed roughly 100 people. Only 20-30 of those employees, however, transferred from the aerospace side of the firm.

During the late 1960's and early 1970's, Kaman also developed a replacement bearing business. The company had developed expertise in bearing production as a component of military helicopter production. As that business declined, the firm explored options for entering the commercial market. While Kaman executives found that the market for new assembly parts was "mature," they identified a niche as a supplier of replacement bearings. Again, Kaman acquired distribution outlets. Production facilities were developed separate from the aerospace division.

Kaman officials stress that most of the diversification undertaken by Kaman was not accomplished by aerospace personnel. They explain that the goals and standards of defense production were not compatible with commercial success. According to one Kaman executive, "the thinking in the aerospace division is that performance is everything." In comparison, Kaman executives stress that commercial enterprises require greater cost consciousness, different financing and accounting procedures, more elaborate marketing and distribution systems, and consumer-oriented service support. The officials interviewed assert that they do not believe their aerospace managers could adequately manage their music distribution business.

Both the guitar and bearing operations grew substantially during the 1970's. They replaced the declining defense business base and helped the firm to weather both uncertainties in the defense contracting environment and the economic ups and downs of the decade. Yet neither business reused a substantial portion of the resources which had been employed in aerospace applications. Kaman's experience clearly is not an example of corporate conversion, but it does represent a successful example of diversification into civilian manufacturing.

Acurex: Acurex Corporation (originally Aerotherm) was founded in 1965 as a spinoff from Itek Corporation. The founders applied their expertise in thermodynamics and chemistry to contract work for the Air Force and NASA. The firm began diversifying out of the defense market in 1968 with a development of the civilian-oriented Products Division. An innovative manager from Stanford's business school directed the diversification effort.

The original Aerotherm group numbered about 50 employees at the time the aerospace business began to decline during the late 1960's. The firm turned its attention to other government markets and the Environmental Protection Agency (EPA) was identified as a potential important customer for Acurex's research and engineering capabilities. The company also acquired a producer of measurement and control instruments, Icore, in 1971. Finally, Acurex received a contract for analysis of the thermodynamic characteristics of reentry vehicle nosetips and established itself in this relatively stable segment of an otherwise declining defense contracting industry.

Between 1971 and 1974, Acurex bid on a number of EPA contracts. By 1974, the firm had created a growing business which provided the EPA, and later the Energy Research and Development Administration (ERDA), with a wide range of engineering services from feasibility studies to implementation. With government funding, Acurex examined combustion processes, developed pollution measurement equipment, and designed less-polluting, energy-efficient furnaces.

Some engineers from the aerospace group were involved in starting the EPA business, but there was little cross-over as the business developed according to Acurex officials. Those personnel transfers which did occur typically involved younger engineers seeking better opportunities.

As concern over the development of alternative sources of energy increased during the 1970's, Acurex expanded into the field of solar energy. The firm independently developed a prototype solar collector. This technology provided a basis for obtaining ERDA (and later, Department of Energy) contracts subsidizing demonstration projects to provide solar heat and electricity to industry.

In both its pollution and energy operations, Acurex had employed technological expertise developed in the performance of defense work. Diversification was not, however, viewed primarily as an adjustment strategy. Rather, the firm's principle objective was high growth. Between 1965 and 1975, Acurex grew at a rate of over 35 percent per year.

In spite of the fact that adjustment was not the prime motivation, the Acurex experience represents an important example of a defense contractor employing its technological knowledge for non-defense purposes. Acurex was not, however, able to reduce its reliance on government contracts. During the late 1970's, the company undertook a joint venture with Philips Petroleum to commercialize Acurex's solar technologies. This effort has proven unsuccessful, primarily because energy prices have decreased rather than increased as was then widely expected.

Boeing Vertol: During the late 1960's, Boeing's Vertol Division explored a variety of options for coping with the decline in demand for its Chinook helicopters. The firm chose to enter the civilian market for mass transit cars based on five general factors: (1) mass transit cars, like helicopters, are self-contained vehicles; (2) market prospects then appeared promising; (3) Boeing anticipated government subsidies; (4) the company expected to mass-produce the vehicles if the federal government established national standards; and (5) firms already in the industry appeared to be ill-prepared to capitalize on this anticipated expansion.

Boeing entered the industry carefully: the firm examined European transit car technology and performed studies on car standards for the Urban Mass Transit Administration (UMTA). Vertol also gained experience managing the development of two prototype car projects prior to bidding on its first major procurement effort.

In 1973, Boeing Vertol received its first major production contract to build 280 standard Light Rail Vehicles (LRVs)--180 for Boston and 100 for San Francisco. Boeing hoped to mass produce these standard cars in much the same way in which the firm had manufactured Chinook helicopters during the Vietnam War. However, project officials failed to recognize fully the difficulties inherent in the development of a major, new product.

Fulfillment of the LRV contract was to be measured by performance targets rather than specific hardware requirements. The process in effect required the development of a new generation of trolley cars without proceeding through a normal development process. In addition, Boeing agreed to an optimistic production schedule which ultimately led to the firm to deliver the first LRVs without any operational testing.

Vertol officials admit that the company failed to anticipate the mammoth engineering requirements of the project. As producers of sophisticated military hardware, company officials confirmed that Boeing engineers and managers in general viewed the building of transit cars as a technically less demanding task. Management also failed to anticipate the difficulties which arise in dealing with the end-users, such as the Massachusetts Bay Transit Authority (MBTA).

The first cars delivered to the MBTA developed major difficulties after but a few weeks of operation. Boeing undertook strenuous efforts to remedy the problems, but the company was eventually forced to pay a substantial cash penalty to settle with Boston.

The LRVs delivered to San Francisco's BART system were modified based on difficulties experienced in Boston, and reportedly have been running reasonably reliably. Boeing's experience in providing cars to the Chicago Transit Authority provides further evidence that the company evolved into a competent mass transit vehicle supplier. In May 1974, Vertol was the recipient of a contract to build 200 cars for Chicago's elevated transit system. The car specified for the Chicago project was evolutionary in design and the contract

allowed for sufficient operational testing. Boeing delivered these cars on time and close to budget, and the cars have subsequently operated reliably in revenue service.

Boeing decided to leave the transit car business in 1978. Company officials cited three major reasons for the decision. First, after Boeing won both the LRV and Chicago contracts, UMTA began backing away from its advocacy of national standards. This move was made partly out of concern that Boeing Vertol might monopolize transit car production. Without standards, however, Boeing feared that mass production of transit cars would be unprofitable. Second, Boeing's original optimism about the transit car industry went unfulfilled: local demand and federal support had not met expectations. Finally, the company was not accustomed to the sealed bids process. Company officials did not feel that the "lowest sealed bid wins all" process fostered superior design and quality.

Boeing's effort is, too, more appropriately, an example of diversification rather than of conversion. At the height of the Vietnam War, 13,000 employees were employed by Vertol division's sprawling plant outside of Philadelphia. By the mid-1970s, that figure had dropped to just over 4,300. Transit car production, at the peak, employed roughly 550 personnel.

#### Conversion or Diversification?

Upon examination, none of the experiences analyzed met the criteria necessary to consider these ventures successful examples of economic conversion. Most would more readily be classified as examples of the corporate diversification approach--with the defense-oriented firms acquiring an outside expertise in a new industry or with a firm adapting its defense technology over a long period (often 5-10 years) to civilian applications. The following factors contrast the experiences we studied with conversion:

- \* Planning for the adjustment which took place within the firms studied usually began after reductions in defense revenues had become imminent. In addition, the planning processes almost never directly involved the workforce that would be affected by the reductions.
- \* In each case a substantial portion of the firm's pre-existing resources--both human and capital--was not employed in the new efforts.
- \* Finally, few firms were able to successfully establish competitive positions in the commercial marketplace.

Even as examples of diversification efforts enjoying mixed success, the experiences of these firms provide useful inferences about the viability of the conversion approach.



### Factors Influencing Success and Failure

To the extent that defense contractors were able to swiftly adjust during the 1970's to reductions in defense procurement, four factors were critical to success:

- \* Leadership: In the more effective efforts, top management was fully committed to the new projects. In the case of the Kaman Corporation, for example, the firm's president turned his guitar hobby into a thriving new business venture.
- \* Technology Transfer: Firms also enjoyed a greater chance of successfully adjusting to defense cuts if existing technologies could be adapted for commercial use. An example is Acurex Corporation's transfer of thermal dynamics technology developed for the Air Force to the fields of pollution control and solar energy research.
- \* Marketing: Identifying and developing a market position was central to the outcome in each case. Successful experiences ranged from Kaman, which located a niche within the mature bearing supply industry, to Acurex's penetration of new markets for government-contracted research.
- \* Acquisition: Acquiring firms or individuals possessing skills in the areas of civilian production in which defense contractors tend to be deficient (such as cost engineering, mass production and marketing) also accelerated the adjustment process. Raytheon Corporation purchased Amana Corporation to produce and market Raytheon's "Radarange," originally a spinoff of defense-supported microwave research.

The problems that inhibited the success of corporate adjustment efforts have become well known; yet it has not always been clear whether the difficulties grew out of the special nature of the defense industry or were in fact pitfalls common to all business ventures. Three problems in particular were common among the experiences we studied.

- \* Unfamiliar with Commercial Market: Defense-oriented firms are often unfamiliar with the special requirements associated with commercial production. This problem particularly plagued Boeing-Vertol's effort to produce modern trolley cars. The firm underestimated the difficulties inherent in developing and servicing a new product. The Rohr Corporation encountered much the same difficulty in its subway venture.

- \* Concurrency: Another major difficulty that hampered the efforts of firms coping with cuts in defense spending was the rush to introduce a product before it was fully tested. Both Rohr and Boeing-Vertol encountered problems early-on as a result of delivering rail cars before all the bugs had been worked out.
- \* Inaccurate Market Projections: Both Boeing-Vertol and Acurex overestimated the emergence of markets that never fully materialized.

### Conclusions

It is not possible to determine fully the feasibility of the mission of the proposed office of conversion from the cases examined in this study alone. However, the following conclusions can be drawn on the basis of this review of past industrial adjustment experiences:

- \* If the conversion approach is to be used for adjusting to reductions in defense spending, the federal government would have to support the creation of new, alternative non-defense markets in such fields as energy research and transportation. Without such support and subsidies, it is unreasonable to expect that defense contractors would be able to quickly adjust to major cutbacks in the Department of Defense demand for industrial goods and services. In essence, new product development will not occur promptly and successfully under the conversion approach without government subsidies.<sup>1</sup> Government assistance, in fact, can sometimes hamper adjustment efforts as was the case in the mass transit field.
- \* Entering into civilian markets requires significant planning and sufficient leadtime to overcome the numerous hurdles. Without government support, the process may take from 5-10 years before generating a profit--if even then. Yet, even with government assistance, the pre-notification clauses featured in the economic conversion bills as currently written are unlikely to provide sufficient lead-time to prevent employment fluctuations.
- \* Even were the government prepared to support development of new enterprises, defense contractors should nonetheless anticipate and plan for reductions well in advance of these

---

<sup>1</sup>During the April 23, 1985 meeting of the Economic Adjustment Committee Technical Task Force, concern was expressed over the rationale for federal subsidies to former defense contractors in order to compete with existing firms already in the new civilian markets.

potential cuts. Defense-dependent firms should constantly explore alternative civilian applications for defense technologies. Indeed, the risks associated with diversifying into commercial ventures are lower during a period of growth in sales to the Department of Defense than when reductions are imminent.

- \* Finally the case studies clearly suggest that diversification and adjustment requires significant reorientation of employees engaged in defense-related work to the demands of the commercial market. The need for retraining is particularly important in the cases of engineers and managers.

A further discussion of previous industrial conversion experience is included at Appendix M.

**PART III**

**CONVERSION TECHNOLOGIES AND MANPOWER SKILLS**

## Chapter 8

### CURRENT FEDERAL ACQUISITION POLICIES AND FEDERAL EFFORTS IN TECHNOLOGY UTILIZATION

A comprehensive analysis of economic adjustment and conversion issues requires consideration of acquisition policies and the salient characteristics of defense contractor activities.

#### Current Federal Acquisition Policies

The guidance for defense contracting activities is provided in the Federal Acquisition Regulation (FAR) and the Department of Defense (DoD) FAR Supplement. Many of the policies and procedures in these documents have a genesis that pre-dates World War II. Current policies have evolved from experience and changes in statutes, military requirements, technology, and world conditions. In addition to basic policy, this guidance addresses those circumstances or conditions that might reasonably arise or apply in a contractual relationship. It also establishes the rules, specifies responsibilities, and mandates advance agreements on cost and other significant and relevant factors.

The paramount objective of the FAR is to assure that the federal procurement system acquires what is needed when it is needed, in the required quality, and at the least cost. Because so many different items, services, organizations, and conditions can be relevant, many collateral areas must be evaluated for applicability, reasonableness, urgency, or other conditions necessary to determine the extent to which the federal government should bear the cost. The following are illustrative of some elements of cost discussed in the FAR that might relate to conversion or economic adjustment:

- \* Contingencies
- \* Economic planning
- \* Idle facilities and idle capacity
- \* Plant reconversion
- \* Relocation

Costs for these purposes are not routinely included in the price of items and services being provided to DoD. As a consequence, they all require the advance review and approval of the contracting officer.

Many firms do product research, development, and long-range planning as a normal part of their business activity. Military requirements cover such a wide range of items and services that there are numerous opportunities to consider possible civilian applications. Often, a civilian version can be produced in a plant where defense production is being completed. The potential for a contractor to include these costs in a contract is influenced by the mix of military and civilian business; the specific terms of the agreement; and the extent to which the contractor has established policies, procedures, or other agreements that are adjudged proper under the terms and conditions of the contract.

Perhaps this country's aviation industry offers the best examples of defense plants being used for civilian purposes after a decline in military requirements. Airframes, engines, navigation and flight control systems, and other components are produced in plants that were originally established to produce military aircraft. Many firms have ongoing programs (involving retraining and relocating personnel) which address operational changes. To the extent that these costs are reasonable and allowable under a contract, the government would be supporting the conversion or adjustment.

#### Defense Procurement and Contractor Activities

During FY1984, defense organizations made more than 16 million contract awards to industry. These ranged from several hundred dollars to several hundred million dollars. The awards were made to firms of all sizes, some employing less than ten people and others employing thousands. They were for products and services ranging from small everyday items and parts to major aircraft, electronic, missile and ship systems.

Virtually every contractor awards purchase orders or subcontracts. The contractors who provide major systems often award several thousand subcontracts to other firms. When purchase orders and subcontracts are added to prime contract awards, the effect is a constant flow of new work at tens of thousands of locations. Since each award specifies quantities, terms, and completion dates, work on the contracts is eventually completed at about the same rate as they are awarded. The net effect of this procurement activity is a constant flow of starts and stops that has an impact on employment in many places.

Discussions of defense contract activities often focus on major systems because of their cost and complexity. However, the vast majority of defense contractor activity involves individual items, components and services that are produced by firms that provide identical or similar products and services for the civilian market. Even though major defense systems have some exotic components and sophisticated capacities, they also contain thousands of common and widely used items. Under these circumstances it is often difficult, and sometimes impossible, to distinguish defense work from work on non-military products and services at many defense contractor locations. This means that changes in the level of defense work often intermix with changes in civilian work.

However, this mixture of military and civilian work is not common in approximately 100 plant locations where major systems or defense-unique items are produced (i.e., aircraft, engines, ships, tanks, electronics, and ammunition). For the most part, these facilities were established and have continued to produce military equipment over a period of years. Virtually all of these plants are operated by a major company, but they are facilities (land, structures, and equipment) that are unique to a military item or service. The talents and expertise of the workforce may also differ in some significant way from what is needed in the civilian market.

Experience has shown that the impact of major reductions in work at these major weapon system facilities varies considerably. For example, over the past 40 years there have been numerous start-ups and completions of major systems at contractor plants in the Los Angeles area. In many cases, firms with expanding programs have employed people who had been working at plants where programs were being phased out. The major termination of the B-1 in 1977 caused about 8,000 individuals to change jobs, but it did not lead to a serious community impact in Los Angeles.

Another extreme can exist in a community where a defense contractor facility, whether large or small, is the major employer. The impact of a sizeable cutback or closure of a defense contractor facility in these circumstances will be essentially the same as that in any town where the principal civilian employer closes down. There are many examples of this situation.

This brief synopsis of defense contractor activities will illustrate that a change in the level of defense procurement is but one of many factors that has a potential for sizeable job loss and other serious impacts in a community. Some of the other factors for consideration are:

- \* Uniqueness of product and facility, and the potential for other uses.
- \* Size and nature of business activity in the area.
- \* Employment impact compared to the area workforce.
- \* Entrepreneurial capacity of management in the affected firm and the community.
- \* The contractors' policies and procedures especially as they pertain to the welfare of their employees, and a determination to continue in business.
- \* Realistic potential for developing new business and employment opportunities in the location.

### Flexible Manufacturing

Recent advances in computer-assisted design/computer-assisted manufacturing suggest that factories 10 to 15 years in the future may have greatly expanded flexibility to effect more rapid changes in products. New developments in robotics, electronics, software, and sensors have made possible a new industrial revolution.

The Office of Productivity, Technology & Innovation within the Department of Commerce foresees more flexible manufacturing plants or core production facilities as the heart of this revolution. The flexible plant approach, however, will require costly expenditures for facilities and training. It will also take several years for development, installation, and use at existing plants. The Department of Commerce is encouraging this increase in flexibility as a means of keeping U.S. manufacturing competitive in international markets.

The inflexibility in many existing U.S. plant facilities could be reduced. Plant equipment could be redesigned or retooled for rapid shift to civilian production or alternatively for defense mobilization. Again, this kind of flexibility is still many years away, but the conversion of plants to civilian production 10 to 15 years into the future may not be as difficult as it is today. Our current adjustment/conversion process is constrained by economic considerations that govern the reuse of industrial facilities "bound" by current plant design and patterns of use.

#### Civilian Applications of Federal Technology

The federal government has a substantial technology applications program. Under the terms of the Stevenson-Wydler Technology Innovation Act (P.L. 96-480), federal agencies (including DoD) have active research and development programs and a collateral responsibility for identifying technologies having potential commercial applications.

There are two channels for making new federal technology available to the private sector for use in civilian markets. First, the Center for the Utilization of Federal Technology (CUFT), within the Department of Commerce, is organized to alert U.S. industry to selected federal technology developments. CUFT typically licenses 35 to 45 patents each year based on "development plans" submitted by private firms to develop and market the specific technology. A development plan will generally cover a period of three to seven years with the participating firm receiving an exclusive license for three to five years.

Second, the Federal Laboratory Consortium for Technology Transfer (FLC) is an organization made up of more than 200 federal laboratories and centers that are associated with 11 federal agencies. Representatives from these laboratories work with the private sector to solve specific technology application problems.

The CUFT/FLC experience indicates that a long-term product development process (often three to seven years) is required by the entrepreneur to market a new product successfully. Small entrepreneurs with specialized market knowledge and technical skills have been especially adept at applying existing federal technologies under license. There are no immediate, second-stage or "second-best" technologies available through CUFT, however, which could be used to address the immediate conversion needs of large defense contractors. Instead, product diversification should be viewed as a long-term process which must be initiated well in advance of any contract cutback.

In summary, federal acquisition policies and technology utilization programs may help local private and public sector officials to meet the challenges of conversion and adjustment in some situations. However, they are not now, nor are they likely to become, the key to success in meeting the adjustment/conversion challenges that may arise in the future.



## CHAPTER 9

### FEASIBILITY OF PROMPT IMPLEMENTATION OF NEW TECHNOLOGIES\*

The process of totally restructuring industrial plants to produce entirely new products is currently being experimented with in Europe. Battelle's Geneva Division has been evaluating the restructuring of manufacturing operations in France. Our experience reinforces the belief that government-directed conversion of industrial plants is a very complex process, fraught with many uncertainties and problems.

This chapter presents the findings of research conducted by the Columbus Division of Battelle Memorial Institute. It is an evaluation of whether new technologies and new worker/managerial skill adjustments can be implemented promptly and cost effectively within our national market economy. This type of action could offset defense contractor cutbacks resulting from budget reduction or termination of major tactical and strategic nuclear delivery systems. Two specific topical issues are addressed: the civilian plant reuse process; and the evaluation of new technologies.

#### Civilian Plant Reuse Process

The process of civilian plant reuse was examined with a focus on identifying a typology of common issues considered by firms in their new product and production process conversion. The results presented are principally derived from Battelle experience and an associated literature review.

Several issues were identified as being common to the plant conversion or reuse process. Although their importance may vary between specific plant conversions, each of the following issues must be addressed in every conversion or reuse effort:

- |              |             |
|--------------|-------------|
| * Facilities | * Layout    |
| * Processes  | * Personnel |
| * Equipment  | * Safety    |

Facilities: Numerous facility issues must be addressed including requirements for floor space, bay height, loading docks, floor loading, process energy, steam and air, support facilities, rail and related transport facilities, and geographic sufficiency of the present location.

---

\*This chapter was prepared by the Battelle Memorial Institute.

Processes: Current process operations must approximate those required in the new operation. Of major concern would be the following process operations:

- |            |                  |
|------------|------------------|
| * Turning  | * Metal Stamping |
| * Milling  | * Painting       |
| * Grinding | * Assembly       |

Equipment: In order to minimize conversion or reuse costs, in-place equipment should be capable of meeting the equipment requirements of the new operation. The state of the technology and age of equipment are major considerations. The type of equipment in place will also be a major factor in determining transfer feasibility to a new operation. Equipment can generally be categorized as follows:

- \* **General Purpose:** A significant amount of general purpose equipment such as drill presses, lathes, and grinders should be readily transferable in the conversion or facility reuse process because they are designed for flexibility of operation.
- \* **Semi-Specialized:** Semi-specialized equipment has both flexible and fixed attributes. Examples of this type of equipment include metal stamping presses and robots. In general, the conversion or reuse of this equipment is often feasible, but at a high cost. For example, the conversion of a robot could easily exceed \$250,000 which is significantly greater than the actual purchase cost (\$50,000 to \$100,000) of the robot.
- \* **Special Purpose:** Special purpose equipment, such as most automation equipment, will normally not be transferable in the conversion or reuse process. Special purpose equipment is normally designed to optimize efficiency in a very specific and often highly specialized process operation.

Layout: The conversion or reuse process will typically require changes in the physical arrangement of equipment and work cells within the plant. Unless the conversion or reuse is made to a nearly identical product or process, significant layout changes will normally be required. Layout changes normally require a team of skilled tradesmen, application engineers, and equipment manufacturing representatives. The cost is typically high due to requirements for changes in equipment design engineering and the installation of new handling equipment such as conveyors and gravity feeders.

Personnel: Changes in process operations will normally require changes in the labor skill mix. If the labor force skills of the company workforce are too high for the requirements of the new operation, then significant wage/benefit negotiation will have to occur, possibly at the risk of losing

many of the better workers who are likely to relocate to more promising centers of employment opportunity. If the company workforce labor skills are inadequate for the new operation, significant retraining will be required. The company will be at a locational disadvantage for recruitment of labor if the geographic region in which the operation is located does not exhibit strength in the skills required in the new operation.

Safety: Conversion to new operations often requires the introduction of environmental control process equipment and worker safety equipment and procedures. The introduction of this requirement in a retrofit scheme is often more expensive than the cost associated with constructing a totally new facility with the environmental control technology and worker safety requirements incorporated in the new design.

### Evaluation of New Technologies

An evaluation of eight selected industries was conducted to identify areas where diversification opportunities for individual plants from defense markets to civilian/commercial markets appear to be most feasible from a market perspective. The eight industries were selected by DoD and represent those industrial categories that are the largest suppliers of goods and services to DoD programs. These eight industries and their corresponding Standard Industrial Classification (SIC) codes are:

- \* Shipbuilding and repair (SIC 3731)
- \* Aircraft (SIC 3721)
- \* Complete guided missiles (SIC 3761)
- \* Aircraft engines and engine parts (SIC 3724)
- \* Aircraft parts and equipment, not elsewhere classified (SIC 3728)
- \* Radio and TV communications (SIC 365, 366)
- \* Electronic computing equipment (SIC 357)
- \* Electrical measuring instruments (SIC 382)

Only three industries contain near-term feasible alternative civilian/commercial markets which may offer potential to absorb additional market competition from former defense suppliers. They are:

- \* Radio and TV communications (SIC 365 and SIC 366)
- \* Electronic computing equipment (SIC 357)
- \* Electrical measuring instruments (SIC 382)

Individual plants producing defense-related products in the other industries evaluated will probably have to seek opportunities in areas unrelated to their present prime markets. Plants in these industries will require a longer transition period due to requirements for alternative product/technology development, production, and market penetration.

Several civilian/commercial markets were consistently identified as offering potential market niches for defense contractors in the remaining industries evaluated. These were:

- \* Heavy machinery, off-road vehicles and equipment
- \* Mass transportation equipment and construction
- \* Transportation equipment to serve offshore oil rigs
- \* Construction of offshore oil rigs

Other markets identified include:

- \* Bridge building and repair
- \* Turbines and pumps for dams

It should be pointed out that all of the markets identified above are in various states of depressed economic condition especially when considered in the short term of less than three years.

Based upon our analysis and past experiences with defense contractors, subcategories within any of the market niches examined will be most appropriate when they require the following:

- \* High quality, low volume products
- \* Relatively low level of competition
- \* Products which require relatively unique technology capabilities

In summary, the concept of an office of conversion is one in which advanced planning conducted by government-sponsored alternative use communities is used to convert industrial facilities from defense production to civilian production within a one-to-two year timeframe. Based upon our experience, this concept will most likely result in very limited success and will likely be cost-ineffective. The complexities of the conversion problem and the dynamics of the marketplace simply do not readily lend themselves to this conversion planning concept and a one-to-two year timeframe.

Finally, history has shown that specialized industries which experience significant loss of markets often just simply disappear, as in the case of the steam locomotive, or cause severe economic repercussions, such as the aerospace industry in the late 1960s and early 1970s. The ability of such companies to diversify into anything other than a similar product has met with very limited success.

For a more detailed discussion on the feasibility of prompt plant reuse and conversion, see Appendix N.

## Chapter 10

### NORMAL INDUSTRIAL DEVELOPMENT PROCESS\*

This chapter describes the process necessary to convert a typical "defense" older heavy equipment manufacturing facility to produce a new marketable product in a new Standard Industrial Classification (SIC) code. Although an actual example was used for study purposes (Blaw-Knox foundry and mill machinery facility in East Chicago, Indiana), the focus of the chapter is on the procedures and the processes necessary to implement the plant redevelopment process rather than the intricacies of marketing and reusing the Blaw-Knox facility.

As a preliminary to the normal reuse process, it is necessary to analyze the former workforce of a facility to determine its size, skill level, wages, etc. A computer analysis of the active production workforce, and those with recall rights, at the Blaw-Knox Foundry & Mill Machinery, Inc., revealed the following workforce characteristics (as of March 25, 1985):

|   |             |             |
|---|-------------|-------------|
| Number of Employees                               | 1,365       |             |
| Plantwide Average Hourly Wages                    | \$10.90     |             |
| Plantwide Average Years of Service with Blaw-Knox | 16 years    |             |
| Plantwide Average Age of Workforce                | 44 years    |             |
| Skill Level of Workforce:                         | <u>1984</u> | <u>1985</u> |
| Laborers (Unskilled)                              | 2.5%        | 2.1%        |
| Operatives (Semi-skilled)                         | 71.8        | 70.2        |
| Craft Workers (Skilled)                           | <u>25.7</u> | <u>27.7</u> |
|   | 100.0       | 100.0       |

The next step in the normal reuse process is to analyze the physical facility and the productive capacity of the plant scheduled for reuse. Overall characteristics of the Blaw-Knox facility are as follows:

Acreage: 45.026  
Building Size: Various  
Infrastructure Characteristics:  
    Water line (maximum size): 8"  
    Sanitary sewer lines (maximum size): 12 to 15"  
    Storm sewer lines (Maximum size): 18" to canal

---

\*This chapter was prepared by the Fantus Company, the industrial location subsidiary of Dun & Bradstreet.

Infrastructure Characteristics (Cont'd):

Electric power service: 11.6 KV

Demand 6,000 KW

Usage - 1984 - 33,000,000 KWH, cost \$2.25M

1981 - 51,400,000 KWH, cost \$2.8M

Natural gas service: 6" line

Usage - 1984 - 136,000 Mcf, cost \$556,000

1981 - 923,000 Mcf, cost \$2.8M

Equipment: Various

In order to identify the specific manufacturing industries that offered the greatest potential for the Blaw-Knox facility, a five-tier screening process was used. Starting with the universe of manufacturing industries (SIC 2011-3999), the screening process systematically reduced the list of potential alternative uses as follows:

| <u>Screening Tier</u>                | <u>Number of<br/>Remaining SICs</u> |
|--------------------------------------|-------------------------------------|
| 1 - (Industry Growth)                | 310                                 |
| 2 - (Market Potential)               | 143                                 |
| 3 - (Operating Conditions)           | 60                                  |
| 4 - (Regional Location Fit)          | 24                                  |
| 5 - (Alternative Industry Selection) | 7                                   |

At the conclusion of the screening process, seven industry groups were identified as offering superior potential for the Blaw-Knox facility:

| <u>SIC</u> | <u>Description</u>                   |
|------------|--------------------------------------|
| 2819       | Industrial inorganic chemicals, Nec. |
| 2821       | Plastics materials and resins        |
| 3362       | Brass, bronze, and copper foundries  |
| 3489       | Ordnance and accessories, Nec.       |
| 3498       | Fabricated pipe fittings             |
| 3592       | Carburetors, pistons, rings valves   |
| 3728       | Aircraft equipment, Nec.             |

The final step in the screening matrix was the identification of specific companies within the selected industries. The companies which were identified at this level included all companies which were classified "primary" in the particular classification. The study identified the largest companies by sales, continued back five years. The targeted companies provide the nucleus of the marketing campaign for the Blaw-Knox facility.

The plant reuse process, so that an existing facility can produce a new marketable product in a new SIC code, requires a number of separate and distinct tasks sequenced in the proper order to facilitate the change in the most timely and efficient manner. Nine major events or activities triggering a series of subset events were identified and categorized according to the appropriate sequencing of the event: prenotification, postnotification, and implementation.

The methodology described in Appendix O for the process of reusing an existing defense facility for a new marketable product outlines the most efficient and timely method of conversion or redevelopment. If no viable alternative users are uncovered in the initial target company list, it is possible that another year will lapse to regenerate another marketing program for a secondary target company list. Each regeneration will require an additional year with the prospects for reusing the facility steadily diminishing with each cycle. Indeed, if unsuccessful after the first cycle, consideration should be given to other strategies, i.e., subdividing the property for multiple users, non-manufacturing uses, etc.

The conversion or reuse process, so that an existing facility can produce a new marketable product in a new SIC code, requires a number of separate and distinct tasks sequenced in the proper order to facilitate the change in the most timely and efficient manner. As shown in Figure 1, nine major events or activities triggering a series of subset events have been identified and categorized according to the appropriate sequencing of the event: prenotification, postnotification, and implementation.

The initial task involves identification of all key events that are required for timely and efficient redevelopment from one SIC industry to another. These were grouped into proper sequencing for accomplishment. A number of activities were identified which should occur prior to actual implementation of the conversion process. These prenotification activities focus primarily on an inventory and evaluation of the existing site and facility as well as maintenance of basic labor force data. This inventory of data should be maintained and updated annually by the defense contractor or the government so that information is current and immediately available if and when conversion becomes a reality. This step can save about six months. Specifically, these data are as follows:

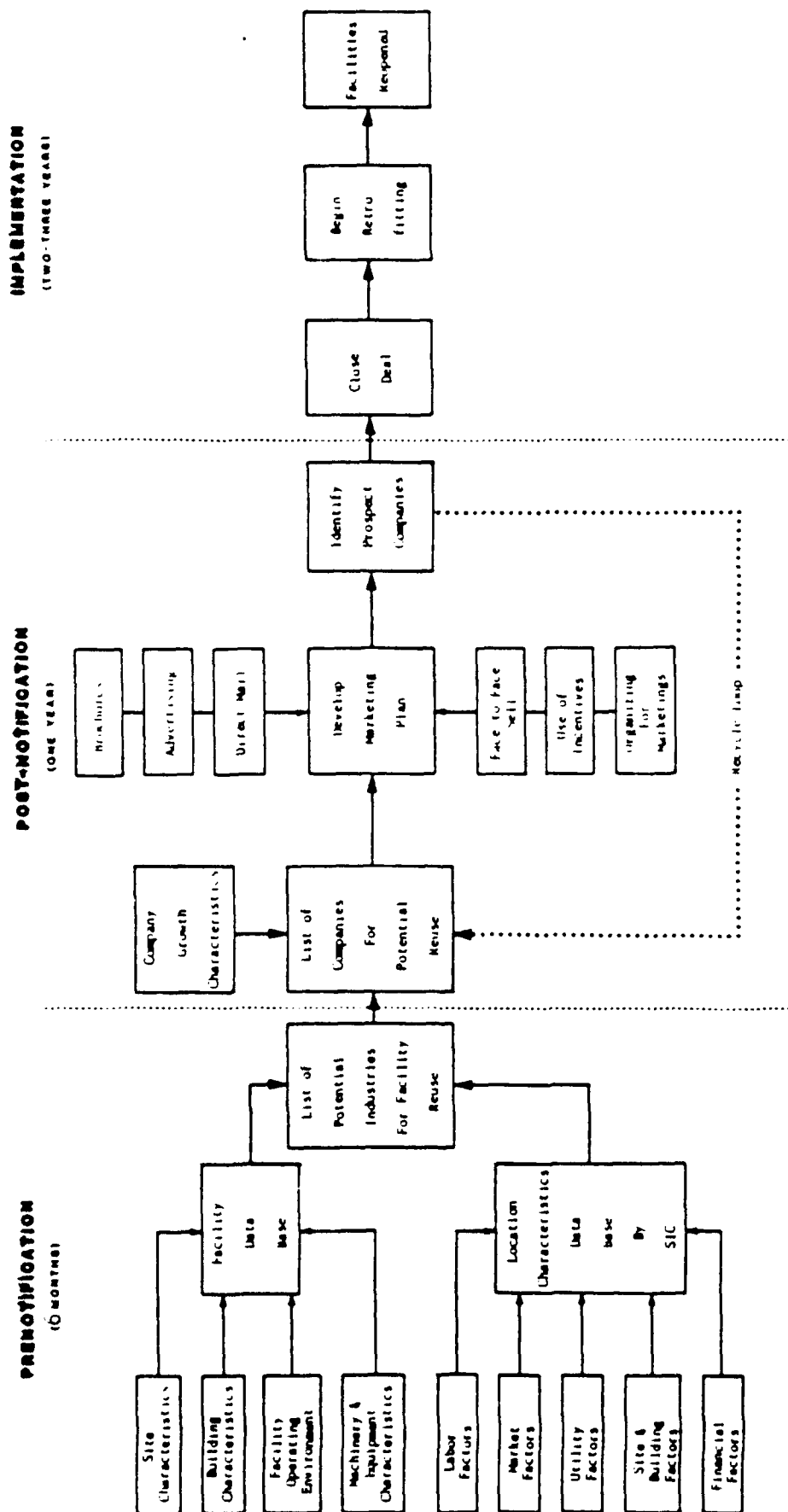
- \* Site Characteristics
- \* Building Characteristics
- \* Facility Operating Environment
- \* Machinery and Equipment Characteristics

These data are then matched with basic plant location data by SIC code and together they provide the building blocks for the identification of potential alternate users of the facility. Indeed, with these kinds of data, it is possible to generate and maintain a list of potential new SIC products for the facility before any redevelopment planning commences. This greatly reduces the time required for the reuse since a marketing program for finding new users can commence almost immediately with actual notification. It is expected that as much as six months time and effort can be saved after notification if these data are generated and maintained prior to notification.

After the formal notification of redevelopment or conversion, the following key activities are required:

- \* Develop the marketing program
- \* Develop necessary grants, inducements, and incentives to market the facility
- \* Arrange necessary worker benefits for those affected by the reuse.

Figure 1





Although no precise timetable can be developed regarding the probable time from announcement to ultimate conversion of the facility to another use, Fantus experience suggests as long as five years may be typical. The exact timeframe for any individual facility will depend upon the following factors:

- \* Age and physical layout of the facility
- \* Type of workforce skills
- \* Location of the facility
- \* Incentives offered

Figure 1 summarizes the key events and timing of the full redevelopment or conversion process. As previously noted, as long as five years can be expected to implement the process from notification to start-up of the facility by a new user. Therefore, as much preliminary data as possible must be gathered prior to notification itself. The building blocks of a marketing program must be ready before actual notification. Indeed, contractors should be encouraged to provide and maintain various data about the facility.

Once notification of conversion or redevelopment is made, the process of external marketing of the facility must commence as quickly as possible. Here, the role of the affected community can be especially important. The property's greatest salability will be in the weeks immediately following announcement. The workforce still will be essentially intact and the facility will maintain the appearance of viability. The longer the facility remains on the market, the more difficult it will be to market and probably the greater the incentives that will be required.

The complexity of the plant reuse/redevelopment process in Figure 1 shows effectively the real limitations on the office of conversion approach. In contrast with a detailed plant and workforce analysis process--usually involving outside engineering and marketing expertise over at least a five-year period, the office of conversion approach unrealistically assumes that this process can be compressed into a one-to-two year period.

Aside from the creation of alternative use committees, there is little explanation in the office of conversion approach as to how the plant management and workforce can somehow: identify a new product; learn the distinctive product requirements of the new civilian market niche; reengineer the plant facilities; and initiate the successful marketing program for the new civilian product--all within a one-to-two year period.

Based on the Fantus experience, the reuse of industrial facilities is exceedingly complex and requires major professional input into both the marketing and engineering aspects of the redevelopment process. The reuse process requires many years to implement and success, even then, may never be assured or achieved.

## Chapter 11

### STATE AND LOCAL ECONOMIC DEVELOPMENT PROCESS\*

This chapter addresses the findings concerning the state and local economic development process. Specifically, it will cover the types of programs used by states and localities to enhance economic development and explore avenues for cooperative action by states, cities, and the federal government.

#### State Economic Development Agencies

State development agencies (SDAs) can be found under various names and with varying structures and responsibilities in every state. Most commonly a cabinet-level agency with a director who reports directly to the governor, the SDA has a wide range of functions, all of which are geared toward promoting economic growth and stability, and creating jobs within the state. These agencies represent a major commitment by states to economic development, with an average 1984 budget of \$7.8 million and an average staff size of about 110 persons. Therefore, state development agencies can be a substantial ally of the federal government and of individually-affected communities in addressing major defense impacts.

For the purposes of this chapter, the states' activities have been divided into categories. The first encompasses investment attraction, while the remainder is largely directed at developing in-state businesses. It should be remembered that there is considerable overlap, since all state incentives have common goals of leveraging private investment and creating jobs.

#### Investment Attraction

Investment attraction remains a major component of most state programs. States employ two types of devices to attract companies and investment: outreach activities and investment incentives. States attempt to identify and "woo" potential investors through vehicles such as public/private prospecting missions and advertising. Special attention has been paid to luring foreign investors and several states including Connecticut and New York make special efforts to promote joint ventures or licensing arrangements. Many states have full-time offices overseas that support these efforts.

States provide a range of technical services such as demographic data on communities and workforce, and information on available sites and buildings, as well as providing a range of financial incentives. Although the types of financial incentives are listed in this section, they are generally equally available to in-state, as well as out-of-state, firms so long as investment and

---

\*This chapter was prepared by the National Association of State Development Agencies and the National Council for Urban Economic Development.

jobs are leveraged. Such incentives include provision of physical facilities at low cost, often financed through the use of tax-exempt industrial revenue bonds; direct loans, guarantees, or interest subsidies; customized training programs which deliver skill-enhanced workers to the company; venture capital programs; and "one-stop shopping" programs for meeting, licensing, and other regulatory requirements.

#### Small Business Development Programs

Small businesses have grown in number and diversity, as states have increasingly looked within their own borders for economic development opportunities. Many states have set up small business ombudsmen, provided help with management, and even established incubator facilities to help nurture home-grown businesses. In addition, various subsidized financing programs have made capital more readily and more cheaply available, particularly to small business, through umbrella bonds, linked deposits, development corporations, bank pools, pension funds, and other mechanisms.

#### Economic Diversification

Diversification planning refers to a variety of activities designed to broaden state economic bases and capture the economic and job growth opportunities posed by recently expanding industries, generally the so-called high-technology industries, and to some extent service-sector industries. Specific programs include: joint research and development partnerships between government, industry, and universities; technology centers; venture capital assistance; entrepreneurial and service sector job training for workers; and tax and regulatory incentives. Indiana, Pennsylvania, and Minnesota have been particularly active in promoting high-technology growth industries.

#### Export Promotion

Export promotion has become a major state tool for expanding the markets of small and medium-sized in-state firms. States emphasize provision of technical assistance to new-to-export and new-to-market companies, providing export education; manuals and handbooks; market studies; trade leads; student interns; resource guides; sponsorship of trade missions and shows; overseas offices; and subsidized export financing or assistance in obtaining private financing. New York, Minnesota and others provide a full range of services.

#### Assisting Communities and Workers

Direct local assistance may be one of the less publicized but increasingly common state economic development functions. Over twenty states have adopted enterprise zone programs which target economic development incentives to stimulate investment in needy communities. Certified cities and related programs provide technical assistance and training for local officials in most states. State mini-Urban Development Action Grant (UDAG) programs and tax increment financing actually support development projects. Many states also provide assistance in the packaging and delivery of federal resources such as Community Development Block Grants (CDBG), Urban Development Action Grants, and Small Business Administration Section 503 Local Development Corporation financing.

States help workers through the various job creation activities discussed throughout the chapter, but more directly through programs designed to upgrade skills and enhance job placement. This is handled predominantly through customized training programs, such as the Arkansas Industry Training Program, which address business needs and prepare people for private sector jobs. Critical assistance is also provided through employment tax credits, and now through the state-administered, federal Job Training Partnership Act (JTPA). States like Nebraska are especially creative in customized job training programs.

#### Economic Adjustment Assistance

Sudden dislocation assistance is provided through many of the programs and activities discussed above, which states can utilize in an attempt to assist communities and workers. Even investment attraction efforts can play a part as a state may seek to find a new occupant for an abandoned building or attract investment to a depressed area. The development agencies' role is often that of coordinating all of the resources available to assist with a particular situation. These may include retraining of workers, service referrals (such as for social and human services), job placement services and local and federal government assistance. A few states, including California and Massachusetts, have formed specific economic intervention teams which seek to assist communities and/or companies faced with plant closures or relocations by providing various forms of technical assistance or expertise. In some cases states can provide technical or financial assistance with converting and modernizing a facility. Several states like New Jersey has established "early warning systems" to try to help troubled firms and possibly prevent a shutdown. The states' economic diversification efforts can help by stabilizing the economy and lessening any adverse economic impact due to decline in certain industries.

#### Local Economic Development Tools and Strategies

Local job creation and development initiatives can be grouped into three "strategic" categories: business retention and expansion, targeted attraction, and new enterprise development. A fourth category, downtown and amenity development, can serve as a catalyst for injecting new life into a city. In addition, other activities which specifically address community and worker adjustment have been developed at the local level. Efforts in these areas enable communities to respond positively to economic dislocations.

- \* Business retention and expansion, now a major focus of most local economic development strategies, can be useful in stabilizing faltering economies by assisting businesses with potential economic and employment opportunities. One of the most commonly used tools is a survey of local business needs, business climate, and area strengths and weaknesses. Survey results can be used as a guide in responding to identified problems and capitalizing on development opportunities through financial assistance, improved access to skilled labor, and other measures to reduce operating costs.

- \* Targeted attraction efforts have resulted from the increasingly competitive market for businesses and the ensuing job possibilities. Generally, communities' promotional strategies have focused on the availability and relative advantages of an area's inventory of assets, including labor, land, buildings, natural resources, business climate, and transport access. Many localities offer financial and training incentive package programs. Some states provide specialized technical assistance to displaced plant workers who desire to open their own businesses. Communities often select a targeted sales approach, emphasizing research and industrial parks and special features for high-technology firms.
- \* New enterprise development, whereby communities "grow" their own businesses, is an area of increasing activity by communities. Incubators, venture capital, entrepreneurship training and management, and technical assistance are used to enhance new and small business development.
- \* Downtown and amenity development, often based on a "theme" such as the historical context of the site, or a festival, or marketplace, has resulted in successful job and revenue-generating ventures for many cities. Downtown revitalization is a major focus of many communities' economic development plans.
- \* Community, worker, and economic adjustment assistance has been particularly effective through the development of new partnerships at the community level. The job training and economic development linkages and private sector involvement provide successful models of such partnerships.

Many communities have recently utilized some form of economic adjustment strategy to cope with the downscaling or closing of a plant or facility. The most successful community adjustment programs are those which deal rapidly and in an ongoing and comprehensive manner with the concerns of business, labor and the community. Many of the tools mentioned above, when targeted appropriately, are effective pieces of an adjustment strategy. The most effective economic adjustment strategy that a community can have is a diversified economic base and an ongoing economic development program--before a cutback or closing occurs.

### Summary

While state and local development activities have been described separately, many of the functions are similar and their goals are the same. States and communities often work closely together and with the private sector in an effort to maximize the use of available resources. States support local efforts through technical assistance and training, as exemplified by Certified Cities programs. They offer an increasing number of targeted incentive programs, like enterprise zones, and administer federal programs such as CDBG and JTPA. Lastly, states and cities cooperate on, combine, and piggyback numerous

incentives and resources in order to package specific economic development projects, as seen in main street revitalization, assistance to high-technology infrastructure financing, and industrial site location.

In structuring any economic adjustment or conversion program, it is imperative that existing resources be used as a starting point. Any federal adjustment process for defense impacts should maximize the effective use of state and local programs, as well as federal and private resources. Any proposed conversion or adjustment entity might also serve as a clearinghouse and referral service for those interested in facilities reuse. Cities, states, relocating companies, developers, and others would then have a central source of information concerning: (1) historical experiences with facilities reuse; (2) state, local, federal, and private programs that can support local adjustment activities; and (3) contacts in local, state, or federal government or in the private sector where further inquiries could be directed.

In assessing existing resources, state and local programs can be summarized into three groupings. First, there are general business development programs, aimed at building and strengthening local economies. If these are successful, then closings and relocations can be kept to a minimum, and local economies can be diverse and resilient enough to absorb some losses. Second, there are several economic development programs targeted to economic adjustment, which attempt to soften the blow of dislocation for communities and workers. And third, there are programs that specifically address the issue of plant and/or facilities.

The Department of Defense has developed, and should continue to develop further, useful information for communities facing dislocation. Consideration should be given to making DoD planning assistance available for a broader range of defense weapons systems cutbacks. In addition, limited funds for implementation of reuse projects and/or technical assistance and planning are presently available through the CDBG and UDAG programs at the Department of Housing and Urban Development (HUD), through Title IX at the Economic Development Administration (EDA), and through the JTPA.

Any community economic adjustment or conversion process should reinforce the key role of the state and local economic development agencies. It would be difficult for one federal office or even alternative use committees to act as an effective substitute for these state and local agencies.

Finally, technical assistance (e.g., planning grants, base or plant reuse plans, industrial development guidance, and market surveys, etc.) by federal agencies and DoD, in cooperation with state and local governments, can help communities offset most major defense industrial cutbacks.

A full discussion of state and local economic development resources is included at Appendix P.

**PART IV**

**ECONOMIC AND SOCIAL SERVICE ASSISTANCE TO PERSONS**

## Chapter 12

### SPECIAL WORKER ASSISTANCE\*

Employment displacement of experienced workers in both civilian and defense sectors of the economy is a growing consequence of pervasive changes in manufacturing sector production, organization, trade policy, and shifts in national investment strategies. The Bureau of Labor Statistics estimates that between 1979 and 1984, 5,100,000 workers were displaced. Previous and current special worker adjustment assistance programs provide valuable information on the range of performance and costs that could be expected from implementing alternative approaches for assisting displaced workers. A review of past and current programs sheds considerable light on the question of which cost-effective policies and economic adjustment tools actually work in our economy.

#### Alternative Approaches To Worker Assistance

The programs examined in this study can be grouped into two broad categories: those oriented principally toward providing income support to affected workers, and those oriented toward providing "positive" adjustment (reemployment) assistance. Income support programs have produced direct, tangible, short-term benefits for recipients by replacing lost earnings. These income support benefits have substantial social outlays which have not been offset by subsequent earnings and taxes paid by program recipients. Moreover, where determination of benefit eligibility has required more than perfunctory certification, and where the pool of potentially eligible workers has been large and dispersed, administrative bottlenecks and excessive costs have frequently resulted.

More cost-effective from society's standpoint have been those programs which have actively emphasized some form of positive adjustment assistance: job search instruction, peer-supported search (for example, in the form of job clubs), retraining and/or relocation. Though more costly to administer than income support programs which typically just involve benefit payments, overall per-participant costs of positive adjustment assistance programs have proven to be much lower and far more cost-effective.

The reason for this lies in the fact that, with few exceptions, these positive adjustment programs have demonstrated placement rates of over 50 percent, and have minimized both recipients' time out of the labor force and their reliance on existing income transfer programs. The majority of positive adjustment assistance programs, including more recent initiatives funded under Title III of the Job Training Partnership Act, have shown per-participant costs of under \$1,000 and per-placement costs of \$2,000-\$3,000. These figures compare quite favorably with typical private placement agency fees, indicating that such programs can, in fact, be delivered economically.

---

\*This chapter was prepared by Abt Associates.



A common thread of explanation for the high performance and low cost of these positive adjustment assistance programs resonates throughout the studies examined. This involves the mix of adjustment services delivered: most programs tended to focus on relatively low-cost activities like job search instruction and assistance, minimizing enrollment in more costly options including classroom retraining and relocation. This common thread might suggest that extensive and expensive skill development, in the form of on-the-job or classroom training, is not necessary for all, or even perhaps for a majority of dislocated workers: job search instruction and support appears to provide the best vehicle for reemploying dislocated workers.

This conclusion, while compelling from a cost perspective, must be qualified to the extent that the timeframes governing the operation of the programs studied effectively precluded their pursuing a strategy (involving extensive retraining and job creation/development, for example) which would be expected to yield returns only in the long run. With the exception of the more recent Title III projects studied, most programs were crisis responses that were expected to gear up, serve the affected individuals, and gear down within a year's time period. Even the Title III projects can be characterized by a relatively short planning horizon, which could be expected to promote conservative programming. Now that Title III program operators have some experience behind them, longer-range planning and a concomitant shift in program service mix may very well emerge.

Several qualitative factors also characterized effective positive adjustment programs. These included early planning for adjustment, community participation in planning and oversight, and a strong emphasis on accountability and performance.

Early planning ensured that a full complement of program services was assembled and available prior to the dislocation, and that affected workers were well-informed about their availability. This typically resulted in a higher rate of service utilization among eligibles, and lower dropout rates once workers had enrolled in the program. Community involvement in program planning and oversight, occurring most frequently through the vehicle of a task force (composed of employers, unions, and local elected officials), tended to result in programs that were directly responsive to local needs and that were ultimately focused on the improvement and expansion of the local area economy. The involvement of local elected officials was particularly important. These individuals are naturally curious about the performance and cost of programs which purport to serve residents of their communities; as a result, a natural "accountability mechanism" emerged wherever such individuals were heavily involved. Moreover, the involvement of local political leaders, more so than private industry, tended to be the catalyst that stimulated innovative job creation and business development programs.

Finally, those programs that were most effective also showed the greatest sensitivity to performance and resource use. These programs tended to employ fixed price or performance-based contracting to maximize the return on program dollars; and to use subcontractors to deliver services wherever client-flow was variable, to minimize fixed operating costs.

## Income Support Programs for Dislocated Workers

One response to worker dislocation, particularly where well-defined industries are affected, has been the establishment of special employee protection, or income support, programs over and above the immediate support provided by Unemployment Insurance. The motivation for such programs is that the affected workers must be "made whole," or be compensated, for job losses which arose due to factors beyond their control (deregulation, import competition, and the like). As a result, income replacement (or the fraction of pre-layoff after tax income replaced by the benefit) under these special programs has typically been high, ranging from 45 to 100 percent. Programs have also typically provided support for long periods of time, from approximately two years to, in more extreme cases, lifetime support. Not surprisingly, these programs have been criticized as disincentives for recipients to return to work.

The largest of these special programs, Trade Adjustment Assistance (TAA) offers assistance to workers dislocated due to import competition. Initiated under the Trade Act of 1962, this program offers cash benefits, training and related services, including relocation assistance, provided by the Employment Service. The program was revised under the Trade Act of 1974 and the Omnibus Reconciliation Act of 1981.

Benefits under the 1962 and 1974 programs were considerably more generous than those provided under the Unemployment Insurance System. Weekly benefits were calculated at 70 percent of a worker's weekly wage or the average manufacturing wage, and had a minimum duration of one year. Up to 26 weeks of additional payments could be authorized if a recipient enrolled in training. (In response to charges of work disincentives, Congress reduced income replacement to that fraction available under Unemployment Insurance, making the program somewhat less attractive.) To receive benefits, a petition had to be filed on behalf of the affected workers; once this was approved by the U.S. Department of Labor, affected workers were required to be certified individually for benefits. Certification was contingent on demonstrating that the layoff was caused by import competition.

Payments under the program grew rapidly after 1974, when certification requirements were relaxed somewhat. Between April 1975 and September 1984, an estimated 1.4 million workers were covered under certified TRA petitions, and received cash payments totaling \$4 billion during the same period. Thus, the average TRA benefit per recipient was approximately \$2,800. Administrative costs added another \$300 million. These figures do not cover the costs of any training or relocation services provided to participants, however, although studies suggest that utilization of these services during this timeframe was quite low. (Including these latter costs, per participant costs were over \$4,000.) Only 72,000 recipients reported receiving training, and 10,500 reported receiving a relocation allowance. Finally, only about three percent of recipients reported being placed in jobs.

Several studies have chronicled the mixed effectiveness of the TAA program. The high-income replacement rate has been shown to increase both the length of the unemployment spell and the probability of employment after lay-off. Moreover, roughly 70 percent of TAA recipients were shown to have been

recalled to their former employer eventually. Bottlenecks in the application and certification processes resulted in between 40 and 75 percent of recipients receiving their first checks after they had returned to work. There was an average lag of 1.3 years between filing the initial petition and receipt of the first benefit check.

Other smaller income support programs have been established in response to specific industry dislocation. The airline/railroad deregulation act authorizes full benefits to be paid to claimants dislocated due to elimination of several job classifications in these industries. Unlike TAA, these programs serve only a small number of workers and do not provide reemployment services.

#### Positive Adjustment Assistance

Prior to the enactment of the Job Training Partnership Act, efforts to provide positive adjustment assistance services to dislocated workers were fragmented. Three vehicles were more or less available: the Sudden and Severe Economic Dislocation program (SSED), part of Title IX of the Economic Development Administration's Public Works and Economic Development Act; Title II B/C of the Comprehensive Employment and Training Act; and CETA Title III National Demonstration funds authorized by the Office of the Secretary of Labor. The Job Training Partnership Act authorizes a separate title which provides for state-administered dislocated worker programs emphasizing positive adjustment.

The Sudden and Severe Economic Dislocation program offered planning grants to communities experiencing plant closures or mass layoffs. In 1977, the Ohio Department of Economic and Community Development and Bureau of Employment Security jointly obtained SSED funds to provide employment assistance to some 1,500 workers dislocated by the termination of B-1 Bomber production at a Rockwell International plant in Columbus. After receipt of an initial planning grant, the two agencies and representatives from the affected plant and union, United Auto Workers (UAW), submitted a formal proposal to EDA, which was funded in the fall of 1978. The program supported employment counseling and job development, provided chiefly through the Employment Service but supplemented by UAW efforts.

Of the 1,500 workers, only 17 percent responded to outreach, and only 14 percent participated. Thirty-eight percent of participants were reported as having found employment, at an average cost per placement of \$2,500. Major factors responsible for this low success rate were the long delay between lay-off and program start-up, and the lack of timely information on workers' skills.

Between 1980 and 1983, several demonstration programs were funded across the country using CETA Title III National Demonstration grants, to provide tests of alternative approaches to economic dislocation that could serve as models for future national programming. These demonstration projects were located in Wayne County, Michigan; Buffalo, NY; Lehigh Valley, PA; Milwaukee, WI; Yakima, WA; Salem, OR; and Alameda, CA. Programs offered a variety of

services, including job search assistance, classroom and on-the-job retraining, and relocation. The experience with these projects was quite positive: placement rates averaged 50 percent, costs per enrollee averaged \$800, and costs per placement averaged \$2,300. Reemployed workers on average earned 75 percent of their pre-layoff wage, and were unemployed for about six months on the average. Administrative costs as a proportion of total expenditures averaged about 20 percent--roughly three times the figure for a pure income support program like TAA--but this was more than offset by lower per-participant service costs and increased employment and earnings.

Evidence from early Title III programs funded under the Job Training Partnership Act supports this general trend: of 96,100 persons enrolled during the Transition Year, approximately half had terminated by the close of June 1984, with 72 percent of these finding employment. Costs per enrollee again averaged \$800, and costs per placement, \$1,950. As with the early demonstration projects, a major reason for the observed performance and cost was a high reliance on inexpensive, reasonably effective services like job search assistance. Other reasons cited included a reduced lag between layoff and program availability; the involvement of local community leaders in planning their own programs; and stronger performance orientations as reflected in the JTPA legislation.

In summary, a review of both previous and ongoing special worker assistance programs offers valuable lessons that can be applied to mitigate effects of dislocation arising from defense procurement slowdowns or potential base closures. Positive adjustment assistance strategies appear to offer the greatest promise of short and long-term social benefits. Moreover, Title III of the Job Training Partnership Act provides a mechanism by which such services can be delivered without creating an entirely new system. Title III performance requirements would appear to provide an impetus for cost-effective service delivery. The legislation's permanent authorization, in addition, affords opportunities for development of longer-range strategies including new business and industry development in affected communities. There is no evidence that separate special worker assistance programs on behalf of "defense-related" workers would be cost-effective in addressing future dislocations from potential weapons systems cutbacks.

A further discussion of special worker assistance programs is reflected at Appendix Q.

## Chapter 13

### DEFENSE WORKER PLACEMENT\*

The purpose of this chapter is to analyze the effectiveness of previous special worker assistance programs and recommend the most effective means for providing defense industrial worker adjustment assistance as part of the study requested by the House-Senate Conference Report on the 1985 Defense Authorization Bill, as reflected at Appendix A. This chapter identifies existing federal, state, and private programs that make assistance available to dislocated workers; reviews the experience of worker adjustment to selected defense industrial cutbacks in the past; identifies how assistance to displaced defense contractor employees can be expedited within the current Job Training Partnership Act (JTPA) programs; and explores options for the prompt identification, retraining, and placement of displaced industrial workers.

#### Review of Existing Programs

Federally-funded employment and training programs to train, retrain and reemploy structurally unemployed workers began on a national scale with the Manpower Development and Training Act (MDTA) of 1962, succeeded by the Comprehensive Employment and Training Act (CETA) in 1972 and JTPA in 1982. Currently, 22 federal laws provide some form of protection or assistance to workers dislocated by specific governmental actions, by foreign trade or by general economic conditions. Several states have passed laws or resolutions to protect industrial workers from dislocation, and a number of private sector and joint union-management programs have been developed.

Federal programs for dislocated workers fall into three basic categories: training, income maintenance, and worker protection. Title III of JTPA funds training and retraining programs through formula grants and discretionary grants to the states for locally-designed and administered programs. Federal funds are matched by state, local and/or private sources. Eligible are workers who have been terminated due to layoff or permanent plant closing and the long-term unemployed who have limited opportunities for reemployment in their usual occupations. Available services also include job search grants and relocation assistance.

Specific services are planned locally and targeted to specific groups of workers, with input from the local Service Delivery Areas (who also administer JTPA Title II programs for low-income individuals) and from the private industry councils (PICs). During the first 9 months of the program (October 1, 1983 to June 30, 1984), 96,100 participants were enrolled at a cost of \$841 per participant, 50,500 completed their training programs and 72 percent of these found employment. Program costs were \$1,951 per terminated employee.

---

\*This chapter was prepared by Abt Associates.

Income maintenance programs include state unemployment compensation, Trade Act of 1974, the Disaster Relief Act of 1973 and special programs such as the Redwood National Park Act of 1978. They illustrate the strengths and weaknesses of income maintenance programs.

- \* Unemployment compensation, including regular state programs providing a basic 26 weeks to all laid-off workers, plus Federal Extended Benefits and special Federal Supplemental Compensation available in areas that meet trigger level requirements, is available to all workers with adequate prior weeks worked and is accompanied by job search and other work test requirements.
- \* Trade Adjustment Assistance, available to workers in groups who are certified as totally or practically unemployed as a result of imports, includes trade readjustment allowances (TRA), training, and job search and relocation assistance. However, prior to amendments in 1981, assistance was primarily in the form of TRA, with over \$4 billion paid to 1.5 million recipients, an average of \$2,800 per worker. Since 1981, TRA has been limited and subject to the same requirements as Federal Extended Benefits, and training has received increased emphasis.
- \* The Disaster Relief Act provides unemployment compensation to those unemployed as a direct result of a major disaster. In FY1984, 24,000 persons received an average of \$725 and the average period compensated has been 6 to 7 weeks.
- \* The Redwood Act has no limit on duration of compensation to workers displaced by reductions in logging operations, and benefits continue to be paid. The FY1986 budget proposes \$4 million in benefits, the same as the TRA budget.

The experience of these programs indicates that, while income maintenance may be needed by many workers displaced by special circumstances, it must be combined with effective work tests and accompanied by training if it is to be effective in facilitating adjustment to new employment.

Worker protection laws at the federal level include a number aimed at protecting workers from deregulation in a number of industries, including airlines and railroads, but no claims have been filed or paid under these laws.

At the state level, 25 states have passed laws or resolutions encouraging advanced information on plant closings, continuance of insurance for laid-off workers, severance pay and reemployment assistance. Only two states (Wisconsin and Maine) have advanced notification requirements. In 1984, Massachusetts adopted a social compact form of advanced information between industry and the state without requiring notification by statute. In turn, the state has worked closely with the affected firms to preserve the jobs wherever possible.

Numerous private sector programs have been developed, usually as part of a collective bargaining agreement. In the automobile industry, a jointly administered fund financed by a contribution for each hour worked will total over \$1 billion for training and retraining active and laid-off workers from Ford and General Motors. The fund has assisted in plant closings in California and New York. The GTE Corporation provided transitional services prior to a plant closing in California over a two-year period, and 85 percent of the 2,000 workers found employment. Mack Truck and the UAW worked with the California Economic Adjustment Team to ease the adjustment of 1,400 workers in a plant shutdown, placing 424 of 561 workers served at an adjustment center. This "Hayward Model" has been utilized in subsequent plant closings.

#### Defense Worker Assistance Case Studies

A number of cases of defense worker adjustment over the last decade were studied, involving workers impacted by defense contract terminations. These include the Technology Mobilization and Reemployment Program (TMRP) for engineers, scientists and technicians; the impact of the 1972 ABM termination on employment in Conrad, Montana; the impact on Southern California of the 1975 decision to terminate the B-1 Bomber, and the more recent plant closing by Fairchild Republic of a plant in Hagerstown, Maryland. These programs and events illustrate some of the issues and problems in designing programs to anticipate and respond to reductions in defense procurement.

The TMRP in 1971 built upon projects in 14 target areas to address the post-Vietnam reduction in aerospace and defense-related employment and an anticipated national surplus of engineers, scientists, and technical personnel. The program provided workshops of job opportunities, counseling on career planning and guidance in preparation of resumes. Funds provided staff in State Employment Service offices, job search grants, on-the-job training and short skill development courses. During the 2-year program, more than 532,000 individuals registered for TMRP services and 34,000 participants were reemployed, at a cost of \$28 million, or about \$825 per person reemployed.

In 1972, the SALT II Treaty caused termination of the construction of an ABM Safeguard site in Conrad, Montana, affecting 1,250 construction workers in the area. The immediate impact on the area was to double unemployment in the four-county area from May to June 1972. This was exacerbated by a loss of jobs from a nearby smelter and wire mill in Great Falls, but unemployment also fell rapidly to pre-termination levels by September of 1972. A large part of this adjustment was the out-migration of mobile construction workers, some of them to other projects in other states managed by the same construction contractors. Relocation and job search assistance was offered through the State of Montana funded by a Department of Labor discretionary grant. A special EAC interagency task force secured funds for economic development activities including road and water projects, facilitated low-interest loans to small businesses and helped the community convert facilities at the ABM site to industrial uses.

The B-1 Bomber termination in July 1977 led to the loss of an estimated 8,000 bomber production jobs at Rockwell International in the Los Angeles area of California, but appears to have had minimal lasting employment impact.

Rockwell established an outplacement center and ran job fairs, registered over 2,000 B-1 employees and received 600 employer recruitment visits. The United Auto Workers developed a cooperative placement program with the Los Angeles Labor Council and located a union seniority worker in the Rockwell Personnel Department to match union members with company openings. The State Employment Development Department, with a \$50,000 federal grant, provided outstationing personnel at Rockwell, used the Los Angeles Job Bank and offered job search and relocation assistance. It was estimated that a maximum of 3 percent of the initial 8,000 workers might remain unemployed after 12 months, due to these efforts and an expanding economy.

In April 1983, Fairchild Republic announced the closing of a plant in Hagerstown, Maryland, because of completion of A-10 production and loss of a parts subcontract with Boeing for the 757 aircraft with a projected loss of 1,500 jobs. The plant closing followed a long-term decline from a peak employment of 10,000 in 1955. After retirements, transfers to an adjacent bonding plant and an estimated 600 persons finding other employment, a total of 553 filed for unemployment benefits. With cooperation from local officials, Fairchild ran job search workshops and outplacement activities at the plant. A Worker Resource Center, established in May, 1984, with a \$45,000 JTPA Title III grant and matching contributions of space and furniture from the UAW and Fairchild, registered 163 Fairchild employees and placed 62 of them. The Hagerstown Junior College received \$100,000 for dislocated worker retraining, including those from Fairchild. An EDA Title IX planning grant provided \$75,000 for an economic base study, and the plant itself will be developed by Citicorp as a credit-card processing center.

In each of these situations, the potential employment impacts of cutbacks were alleviated or eliminated by the combined efforts of the employers, the unions, the federal, state and local governments and the community, with relatively small inputs of additional funding--and in no small part by favorable economic conditions in the local area and the economy as a whole.

#### JTPA and Other Program Options

The experience of past and current laws and individual cases of plant closings and cutbacks due to economic events and defense cutbacks indicated that a number of elements for successful defense industrial worker adjustment programs are in place in the form of the Job Partnership Training Act and other programs. JTPA, and especially Title III, provides an extant organization and funding mechanism to provide training and placement assistance to dislocated workers. As noted in the case of Trade Adjustment, funding in the form of income maintenance is not a substitute for retraining and reemployment services. The JTPA system provides a local organization and service delivery system to respond to local needs. JTPA is complemented in many cases by local economic development agencies who coordinate the economic planning to adjust to loss of defense employment. The collective bargaining agreements of some defense contractors provide for union involvement in out-placement activities.

However, the existence of these mechanisms does not mean that they will work effectively in the absence of leadtime and advance contingency planning. The most successful examples of worker dislocation adjustment have been those



where there was advance information, allowing the employer, the union and the government agency to develop and coordinate adjustment plans, in advance of actual layoffs. Time is required, under JTPA, as under other programs, to develop and approve program plans on a fiscal year basis. Time is also required for the employer, the unions, and the government to develop the coordinated resource mobilization plans that are essential to minimize transitional employment for defense industrial workers.

It is important to recognize that the Defense budget process normally provides sufficient leadtime to accommodate or plan for the phase-out of major weapons systems programs. The DoD budget includes an annual report on "Program Acquisition Costs by Weapon System" which identifies the expected completion of specific weapons systems programs at least one year in advance. Some of the phase out weapons systems will be replaced by other follow-on systems produced at the same plant; some other systems being phased-out are produced in the same plant with other ongoing DoD programs. In still others, there may be sufficient civilian work at the plant and a large employment impact will not occur. In the few remaining cases, there is a need to investigate the likely community and worker impact programs--both at the prime contractor activity and for major subcontractors. The potential large subcontractor impacts can also be identified readily through the DoD system project offices and the prime contractors on a case-by-case basis.

For each of the major weapons systems forecast for completion in the annual Defense budget submission, it is recommended that OEA investigate the likely community-worker impacts and provide the Economic Adjustment Committee, by May of each year, with information in the anticipated specific community/worker adjustment problem areas--both at the prime and the large subcontractor levels from the few major weapons systems program completions each year. This information on potential specific community-worker impacts would provide further leadtime for planning needed adjustment actions to the local communities, the local economic development activities, the private industry councils, as well as to the states and the EAC agencies.

In summary, there is no evidence of a need for new funding or new agencies to address the potential problem of defense industrial worker dislocation such as suggested by the proposed office of conversion.

A further detailed analysis of defense worker placement programs is included at Appendix R.

PART V

ADJUSTMENT ASSISTANCE TO MINIMIZE DISLOCATION OF  
WORKERS, COMMUNITIES, AND INDUSTRIES

## Chapter 14

### ADJUSTMENT ASSISTANCE TO MINIMIZE DISLOCATION OF WORKERS, COMMUNITIES, & INDUSTRIES

A key concern of the House-Senate conferees in requesting this study was the "feasibility of creating an Office of Economic Conversion in the Department of Defense to provide economic readjustment assistance to communities and workers affected by the subsequent elimination of strategic and tactical nuclear weapons." (Appendix A)

Weighing the "feasibility" of the proposed office of conversion involves determining the extent to which it would be "capable of dealing successfully with" or "capable of doing or carrying out"<sup>1</sup> the Conference Report objectives in addressing major defense impacts within our market economy. This feasibility evaluation involves a judgment as to expected performance of the proposed office of conversion.

#### Feasibility of the Office of Conversion

To what extent, then, do the evidence and findings in the previous chapters support or demonstrate the likely effectiveness of the proposed office of conversion in fulfilling the objectives in the House-Senate Conference Report?

The previous chapters contain no evidence that the proposed office could provide effective economic readjustment in behalf of communities, industries and workers affected by major defense program changes as called for in the Conference Report:

- \* There are no current examples of civilian products in the marketplace today which were developed through the office of conversion approach in either the U.S. or the more structured European economies. There have been several unsuccessful efforts following the office of conversion approach, but there is simply no evidence available whatsoever to support the likely successful performance of the proposed office of conversion.
- \* Aside from about 100 large defense weapon system plants, there is little indication that "defense-related" workers can be easily distinguished from other workers throughout our economy for the purpose of separate worker assistance or benefit programs.

---

<sup>1</sup>Webster's Unabridged Dictionary

- \* The typical plant redevelopment/reuse process for an entirely new product is complex and requires five or more years to complete in terms of product identification, engineering and development, and marketing. There are few opportunities for the immediate application of defense-related technologies in one-to-two years to serve new civilian markets. The evidence does not indicate that defense-related cutbacks can be addressed more easily or effectively by the conversion approach than by the approach followed by local, state, and federal economic development agencies and the private sector for other civilian plant closures throughout our economy.
- \* The proposed office of conversion would involve all of the policy characteristics of a national industrial policy for defense activities alone. It would be extraordinarily difficult to distinguish defense-related work in most plants throughout the country. The implications of governmental intrusion into the economy and into the individual plant management are so significant that the industrial policy issue should not be addressed as a separate defense-related issue.

The proposed office of conversion approach would not be viewed as an inexpensive, simple solution to a complex industrial engineering and economic development problem--even if there were some minimal evidence that the conversion process might work. The advanced planning process through alternative use committees would alone involve a cost of "several hundred million dollars per year."

#### Need for Community-Worker Adjustment Assistance

Major plant closures, job losses, and the restructuring of industries in our economy often involve pain and turbulence to workers and communities. The difficulty and complexity cannot be simplified for defense industry by creating an office of conversion. Rejecting the notion that community and worker adjustment problems can be so simple does not mean, however, that serious defense impact community-worker adjustment problems might not arise in very specific locations.

To the contrary, the experience of the DoD and the member agencies of the Economic Adjustment Committee (EAC) is that major defense actions, such as base closures, large contract terminations, and base expansions, and other major program changes can cause serious adjustment problems for workers and communities alike which do require priority attention. Indeed, DoD and the member agencies of the Economic Adjustment Committee share a common goal of alleviating the dislocations that may be imposed by major defense program changes on workers and communities by assisting economic adjustments within our market economy.

### Types of Recommended Adjustment Assistance

Based on the experience in previous defense impact situations, the following types of federal assistance are important in addressing defense impact problems:

- \* Manpower Training: The Jobs Training Partnership Act (JTPA) has prompted local manpower training officials to work closely with local economic development representatives under the auspices of the private industry councils (PICs). Title III of JTPA has been used effectively in most states to deal with private sector plant closures and cutbacks. Title III has the flexibility and adequate discretionary resources to deal with the occasional employment impacts from defense cutbacks along with other sudden private sector dislocations.
- \* Technical Assistance: Planning grants (for base or plant reuse plans, industrial development guidance, and marketing surveys by the federal agencies and DoD, in cooperation with state resources) can help communities offset most major defense industrial cutbacks.
- \* Specific Federal Assistance: Most federal assistance today is provided through formula or block grants to the states and communities. Block and formula grants such as Community Development Block Grants, Revenue Sharing, Federal Highway Assistance, Environmental Protection Agency Waste Water Treatment grants, etc., allow communities and states to establish their own priorities within federal guidelines for the long-term management of community and economic development programs. The increased reliance on block and formula grants have been a major element in the improved state economic development capacities and in the creativity of the state manpower training programs described in Chapters 11 and 12. In addition to long-term block or formula grant needs, defense impacts occur in specific local communities with a one-time requirement for targeted resources to upgrade utilities at former DoD bases or to redevelop older industrial buildings.

As discussed in Appendix J, specific community adjustment requirements cannot be forecast statistically in advance based on the size of the pending defense impact. It is important, therefore, to have some flexible resources to address specific community requirements as the community recovery programs progress. Early in the adjustment cycle, attention must be given to manpower training and technical assistance needs. Later (often one-to-two years), the specific community assistance needs will usually relate to the physical reuse of the industrial plant or base facilities--primarily to leverage private sector investment.

This summary of the types of recommended adjustment assistance programs is based on community economic adjustment experience described in Chapters 4 and 5. This summary also reflects the growing state and local economic development capacities and resources and the types of effective manpower training/placement programs presented earlier. Finally, but most importantly, this summary recognizes that the ultimate objective of any community economic adjustment program is to attract and retain private sector investment and employment opportunities.

#### Recommended Strengthening of the Economic Adjustment Process

There are several recommendations which can improve the responsiveness of existing federal adjustment programs in addressing major defense impacts in cooperation with state and local governments and with the private sector.

By requesting the two feasibility studies in the House-Senate Report, it was evident that the conferees were concerned with identifying future possible defense industrial cutbacks and with addressing these potential impacts effectively. The DoD response on the "Feasibility of an Annual Report on Defense Employment by Congressional District for Selected Weapon Systems," indicated that pertinent data were already available to serve as the basis for special ad hoc studies in the event of scheduled weapons systems cutbacks. It is important to recognize that many DoD weapons systems production cutbacks do not always result in significant local impacts and that these potential local employment effects can only be evaluated on a case-by-case basis beginning with the project manager and the local plant levels.

As indicated in Chapter 13, there is a need to provide upwards of 6-months leadtime to the communities and private industries councils to initiate manpower placement efforts in the case of any major plant cutback. This needed leadtime can be provided by OEA to the Economic Adjustment Committee and the communities and PICs by an analysis of the actual manpower impact of the few selected weapons systems cutbacks identified in the annual Defense budget.

The Defense budget process normally provides sufficient leadtime to accommodate or plan for the phase-out of major weapons systems programs. The DoD budget includes an annual report on "Program Acquisition Costs by Weapon System" which identifies the expected completion of specific weapons systems programs at least one year in advance. Some of the phased-out weapons systems will be replaced by other follow-on systems produced at the same plant; some other systems being phased out are produced in the same plant with other ongoing defense programs. In other instances, Foreign Military Sales may support the continuation of the production line. In still others, there may be sufficient civilian work at the plant and a large employment impact will not occur. In the few remaining cases, there is a need to investigate the likely community and worker impact programs--both at the prime contractor activity and for major subcontractors. The potential large subcontractor impacts also can be identified readily through the defense system project offices and the prime contractors on a case-by-case basis.

For each of the major weapon systems forecast for completion in the annual defense budget submission, OEA would continue its previous practice of providing an advanced alert of defense impacts and would provide the Economic Adjustment Committee by May of each year with a forecast of potential specific community/worker adjustment problem areas. The regional employment methodology described in Chapter 3 and Appendix H would be used as the starting point for this special analysis along with the information available to the Military Department project manager for the affected system.

As recommended in Chapter 5, potentially impacted communities should be encouraged to initiate their adjustment planning efforts in advance of the production line phasedowns or contract conclusions. Consideration can be given in preparing the 1986 Legislative Proposals to permitting DoD Community Planning Assistance under 10 USC 2391 for cases involving the conclusion of major weapon systems production programs involving 1,000 or more employees.<sup>2</sup>

These recommended strengthening steps are offered to enhance the capacity of the Economic Adjustment Committee to assist communities and workers affected by major changes in defense programs. It is important to recognize that plant closures and job losses in our economy affect both civilian and defense activities alike. There are few simple solutions which make defense-related impacts easier to resolve than other economic impacts throughout our market economy. However, it is important to ensure that our federal agencies, in cooperation with state and local governments, can deal as cohesively and as effectively as possible with major defense-related impacts.

---

<sup>2</sup>These information and planning steps can be accomplished readily within the Economic Adjustment Committee structure and within the DoD budget process. No increase in DoD/OEA resources will be required to implement these information and planning steps. The inclusion of this community planning step in this report is not intended to imply its acceptance at this time or ultimately or Administration policy.